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International congress of dermatology

# Sixth International Dermatological Congress

Held at the

## New York Academy of Medicine

15–17 West 43d Street

September 9th to 14th, 1907

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## Official Transactions

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Edited by

John A. Fordyce, M.D.

Secretary-General

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The Secretary-general wishes to thank the *Journal of the American Medical Association* for permission to use the cuts illustrating Dr. Pusey's article; the *Medical Record* for those used in connection with Dr. Abbe's article; the *Revue Pratique des Maladies Cutanées Syphilitiques et Vénériennes* for the cuts accompanying Dr. Lassueur's article; and the *Journal of Cutaneous Diseases* for the majority of the other illustrations.

# LAWS

THE SIXTH INTERNATIONAL DERMATOLOGICAL CONGRESS will be held September 9th to 14th, 1907, at the Academy of Medicine, 17 West 43d Street, New York, under the following regulations:

I. The meetings will be open to the public.

II. Any member of the medical profession in good standing may become a member of the Congress by registering with the Secretary-General at the time of the meeting, or previously, or with the secretaries of their respective countries. The fee for membership shall be five dollars (£1, 20 marks, 25 francs), payable to the Secretary-General in New York, or to the foreign secretaries.

III. Papers should be presented in writing in the English, French, German, Spanish, or Italian languages, and may be discussed in the language most familiar to the speaker. Twenty minutes will be allowed each person selected to present the questions proposed by the Committee, and ten minutes to readers of voluntary papers. Five minutes will be granted to any member for discussion of papers. Members desiring to present papers shall announce to the Secretary-General the title before May 1st, 1907, and shall send an abstract of the same to him before that date. A full copy of every paper presented shall be given to the Secretary of the Session immediately after it is read.

IV. Precedence in debate will be given to members who announce beforehand their desire to take part in it. Papers shall be presented in the order as given on the official program.

V. The proceedings of the Congress will be published, and each member will be entitled to a copy.

VI. Clinical Sessions will, on certain days, precede those for the presentation of papers, at which proper time shall be allowed for the formal discussion of important cases. Time will also be allowed for the exhibition of drawings, paintings, photographs, models, microscopical demonstrations, and apparatus relating to dermatology.

## STATUTEN

I. Die Sitzungen sind öffentlich.

II. Als Mitglieder des Congresses werden qualificirte Aerzte zugelassen, die sich bei dem General-Sekretär zur Zeit der Sitzung oder bei den Sekretären der betreffenden Länder anmelden. Der Mitgliedsbeitrag beträgt fünf Dollars (£1, 20 Marks, 25 Francs), zahlbar an den General-Sekretär in New York oder den betreffenden ausländischen Sekretär.

III. Vorträge sind in englischem, französischem, italienischem, spanischem oder deutschem Manuscript einzureichen, und kann die Discussion in der Sprache stattfinden, die dem Redner am geläufigsten ist. Die Zeit für den Vortrag eines von dem Committee mit einem Referat betrauten Mitgliedes ist auf zwanzig Minuten, für Einzelvorträge auf zehn Minuten, für Reden in der Discussion auf fünf Minuten festgesetzt. Mitglieder, die einen Vortrag zu halten wünschen, haben das Thema vor dem 1. Mai, 1907, anzumelden und einen Auszug des Vortrages vor dem 1. Mai, 1907, an den General-Sekretär einzureichen. Die vollstandigen Manuscripte aller Reden müssen nach beendetem Vortrag sofort dem Sekretär der Sitzung eingehändigt werden.

IV. Beider Discussion sollen diejenigen Mitglieder den Vortritt haben, die den Wunsch, sich an derselben zu beteiligen, vorher angemeldet haben. Vorträge sollen in der im officiellen Programm angegebenen Reihenfolge gehalten werden.

V. Die Verhandlungen werden im Congress-Bericht veröffentlicht und ist jedes Mitglied zu einem Exemplar desselben berechtigt.

VI. Klinische Sitzungen sollen an den bestimmten Tagen den Vorträgen vorausgehen, und für die Diskussion wichtiger Fälle soll eine angemessene Zeit festgesetzt werden. Auch soll für die Ausstellung von Zeichnungen, Bildern, Photographien, Modellen, mikroskopischen Präparaten, dermatologischen Instrumenten und Apparaten genügende Zeit gewährt werden.

## RÈGLEMENTS

I. Les séances seront publiques.

II. Tous les membres réguliers de la profession médicale peuvent devenir membre du congrès en s'inscrivant chez le secrétaire général au moment des séances, ou auparavant, ou avec les secrétaires de leur pays. Le montant de la cotisation sera de Cinq Dollars (20 Marks, 25 Francs, £1), payable à New York au secrétaire général ou aux secrétaires étrangers.

III. Les manuscrits devront être écrits en Anglais, Français, Allemand, Espagnol ou Italien, et pourront être discutés dans le langage le plus familier à l'orateur. On accordera vingt minutes à chaque personne choisie pour présenter les questions proposées par le comité et dix minutes aux lecteurs de manuscrits non préablement annoncés. On accordera cinq minutes à chaque membre pour la discussion des manuscrits. Les membres desirant présenter leurs manuscrits devront en annoncer le titre avant le 1er Mai 1907, et devront en envoyer un extrait au secrétaire général avant cette date. Une copie exacte des manuscrits présentés devra être donnée au secrétaire de la séance immediatement après lecture faite.

IV. La précédence dans les débats sera accordée aux membres qui annonceront à l'avance leur intention d'y prendre part. Les manuscrits seront présentés dans l'ordre donné par le programme officiel.

V. Le compte rendu du congrès sera publié et chaque membre du congrès aura droit à un exemplaire.

VI. A certains jours les sessions de cliniques précéderont la présentation des manuscrits. Dans ces sessions, on accordera le temps nécessaire pour la discussion formelle des cas importants. On accordera aussi le temps nécessaire pour l'exposition des dessins, peintures, photographies, modèles, pour les démonstrations microscopiques et les appareils concernant la dermatologie.

## REGLAMENTO

I. Las sesiones serán públicas.

II. Cualquier miembro de la profesión médica, puede ser miembro de este Congreso, inscribiéndose con el Secretario General ó con los secretarios de las respectivas naciones, al tiempo de la apertura del Congreso ó anteriormente. La cuota de inscripción será de (£1, 20 marks, 25 francos, 5 pesos oro.) pagaderos al Secretario General en New York, ó á los secretarios de las naciones extranjeras.

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IV. Las comunicaciones se leerán en el órden indicado en el programa oficial. Se dará precedencia en las discusiones, á los congresistas que hayan expresado previamente su deseo de participar en la discusión.

V. Los trabajos del Congreso serán publicados, y cada congresista tendrá derecho á recibir un tomo.

VI. Sesiones Clínicas, precederán ciertos dias á la presentación de las comunicaciones; en éstas se asignará tiempo suficiente para la satisfactoria discusión de casos importantes. También se asignará tiempo para la exhibición de dibujos, laminas, fotografias, modelos, demonstraciones microscopicas, y aparatos pertenecientes á la dermatología.

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I. The Etiological Relationship of Organisms found in the Skin in Exanthemata.

II. Tropical Diseases of the Skin.

III. (*A*) The Possibility of Immunization against Syphilis.
(*B*) The Present Status of our Knowledge of the Parasitology of Syphilis.

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Dyer, Isadore, New Orleans

Echeverria, Emilio, Limon, Costa Rica
Ehlers, E., Copenhagen
Ehrmann, S., Vienna
Eichhoff, J., Elberfeld
Elliot, George T., New York
Endokimow, Victor, Charkow
Engman, Martin F., St. Louis
Ernò, Ivanyi, Budapest
Evans, Melville G., Eugene, Ore.
Ewing, William B., Pittsburg
von Eberts, E. M., Montreal

Falçao, Zeferino, Lisbon
Fanoni, A., New York
Farrell, John T., Providence
Finger, Ernest, Vienna
Fischer, George, Paterson
Fischkin, E. A., Chicago
Fisher, G. M., Utica
Fitzgerald, Clara P., Worcester
Foerster, Otto H., Milwaukee
Forchhammer, H., Copenhagen
Fordyce, John A., New York
Foster, Burnside, St. Paul
Fournier, Albert, Paris
Fox, Charles J., Hartford
Fox, George Henry, New York
Fox, Howard, New York
Fox, T. Colcott, London
Frick, William, Kansas City, Mo.

Gaines, Toulmin, Mobile
Galewsky, Eugen, Dresden
Galloway, James, London
Garceau, Alexander E., San Francisco
Gardner, Faxton E., New York
Gardner, Gabrielle D., New York
Garnett, A. S., Hot Springs, Ark.
Gastou, Paul, Paris
Gaucher, Ernest, Paris
Gay, Alexandre, Kasan
Gedoelst, Louis, Brussels
Geyer, Louis F. A., Zwickau, Sa.
Geyser, A. C., New York
Gilchrist, T. Caspar, Baltimore
Gold, James D., Bridgeport
Goldenberg, Hermann, New York
Gottheil, William S., New York
Grindon, Joseph, St. Louis
Grosz, Siegfried, Vienna
Grünfeld, A. I., Odessa
Guiteras, Ramon, New York
Gwathmey, James T., New York
de Galatz, Petrini, Bucharest

Haase, Marcus, Memphis
Hallopeau, H., Paris
Hansen, A., Bergen
Hardaway, William A., St. Louis
Harding, George F., Boston
Harmon, George E. H., Brooklyn
Harris, Samuel B., New York
Harttung, Breslau
Hartzell, Milton B., Philadelphia
Havas, A., Budapest
Hay, Eugene C., Hot Springs, Ark.
Hazen, H. H., Baltimore
Heidingsfeld, M. L., Cincinnati
Henle, Pearl H., New York
Hirschler, Rose, Philadelphia
Hodgson, John H. P., New York
Hoffmann, Erich, Berlin
Holder, Oscar H., New York
Hopf, Friedrich E., Dresden
Howe, J. S., Boston
Hügel, Georges, Strassburg
Hutchinson, Jonathan, London
Hyde, James Nevins, Chicago

Jack, James M., Montreal
Jackson, George T., New York
Jackson, Jans, Los Angeles
Jadassohn, J., Berne
Jagle, Elizabeth C., New York
Jamieson, W. Allan, Edinburgh
Jappe, C. F., Davenport, Iowa
Jeffrey, Stewart L., Yonkers
Jenner, Albert G., Milwaukee
Jewett, Mary B., New York
Johnston, James C., New York

Jullien, Louis, Paris

Kanoky, J. Phillip, Kansas City, Mo.
Keyes, Edward L., New York
Keyes, Edward L., Jr., New York
de Keyser, L., Brussels
Kinch, Charles A., New York
King, J. C. Elliott, Portland, Ore.
King, James M., Nashville
Kingsbury, Jerome, New York
King-Smith, D., Toronto
Kirby-Smith, J. T., Sewanee, Tenn.
Klotz, Hermann G., New York
Knaffl-Lenz, Erich, Graz
Knowles, Frank C., Philadelphia
Krefting, R., Christiania
Kromayer, Ernst, Berlin

Lanahan, Joseph A., Albany
Lang, E., Vienna
Lanz, A., Moscow
Lanzi, G., Rome
Lapowski, Boleslaw, New York
Larned, Ezra R., Detroit
Lassar, Oscar, Berlin
Lassueur, Auguste, Lausanne
Lawrence, Herman, Melbourne
Lea, Juanita I., Detroit
Leredde, L. E., Paris
Lespinasse, Victor D., Chicago
Lesser, E., Berlin
Leviseur, Frederic J., New York
Lévy-Bing, Alfred, Paris
Lewis, Daniel, New York
Lieberthal, David, Chicago
Likes, Sylvan H., Baltimore
Lombardo, Cosimo, Modena
López, Félicisimo, New York
Lovejoy, Edward D., New York
Loxton, William A., Birmingham
Lusk, Thurston G., New York
Lustgarten, Sigmund, New York
Lyle, Halsey M., Kansas City, Mo.
Lyons, John J., Brooklyn, N. Y.

MacDonald, Belle J., New York
MacKee, George M., New York
Maynard, O. T., Elyria, O.
McBride, William, Kansas City, Mo.
McGavock, Edward P., New York
McGowan, Granville, Los Angeles
McLean, N. T., Washington, D. C.
McMurray, W., Sydney, N. S. W.
Meek, Edith R., Boston
de Mello Breyner, Thomaz, Lisbon
Ménage, H. E., New Orleans
Mendes DaCosta S., Amsterdam
Metzger, Jeremiah, New York
Mewborn, A. D., New York
Mibelli, Vittorio, Parma
Michailovsky, M., New York
Mink, O. J., Washington, D. C.
Miller, R. M., Vienna
Möller, Magnus, Stockholm
Montgomery, Douglass W., San Francisco
Montgomery, Frank H., Chicago
Mook, William H., St. Louis
Morris, Malcolm, London
Morrow, Howard, San Francisco
Morrow, Prince A., New York
Mount, Louis B., Troy
Müllern-Aspegren, U., Stockholm
Myers, Lotta W., New York

Nadler, Alfred G., New Haven
Neuberger, Josef, Nuremberg
Newman, Emanuel D., Newark
Nicolas, J., Lyons
von Niessen, Max, Wiesbaden
Noyes, A. W. Finch, Melbourne

Oberndorfer, I. Pierce, New York
O'Brien, C. M., Dublin
Ochs, Benjamin F., New York
Ohmann-Dumesnil, A. H., St. Louis
Olavide, J. E., Madrid
Olliphant, S. R., New York
Oltramare, Geneva
Oppenheim, M., Vienna
Ormsby, Oliver S., Chicago
Oulmann, Ludwig, New York

Parounagian, M. B., New York
Peet, Edward W., New York
Pernet, George, London
Peter, W., Königsberg
von Peterson, O., St. Petersburg
Pfahler, George E., Philadelphia
Phillipson, A., Hamburg
Pick, F. T., Prague
Pisko, Edward, New York
Pittman, John G., Chattanooga

Pizzini, Tancredi, Milan
Plumley, W. Franklin, Rochester
Polland, Rudolf, Graz
Pollitzer, Sigmund, New York
Pontoppidan, E., Copenhagen
Pospélow, A. J., Moscow
Post, Abner, Boston
Potter, Alfred, Brooklyn, N. Y.
Pringle, J. J., London
Pudor, G. A., Portland, Me.
Pusey, William A., Chicago

Quinn, William A., Chicago

Rasch, Carl, Copenhagen
Ravitch, M. L., Louisville
Ravogli, Augustus, Cincinnati
Regensburger, Alfred, San Francisco
Regidor, A. Pardo, Madrid
Remsen, Ira, Baltimore
Renault, Alex., Paris
Riehl, G., Vienna
Rixey, P. M., Washington, D. C.
Robelin, Henry, Havana
Robinson, Andrew R., New York
Robinson, Daisy M. O., New York
Robinson, William J., New York
Roca, Joseph M., Barcelona
Rona, S., Budapest
Rosenthal, Melvin, Baltimore
Rosenthal, O., Berlin
Rosolimos, Sp., Athens
Ruggles, E. Wood, Rochester

Satenstein, David L., New York
Schamberg, Jay F., Philadelphia
Schmidt, Louis E., Chicago
Schöney, L., New York
Schroeder, H. H., New York
Schultz, Oscar T., Cleveland
Schumacher, Carl H., Aachen
Schwartz, Hans J., New York
Selenew, J. Th., Charkow
Selhorst, S. B., The Hague
Sequeira, James H., London
Shattuck, George C., Boston
Shelmire, Jesse B., Dallas
Shepherd, Francis J., Montreal
Sherwell, Samuel, Brooklyn, N. Y.
Shields, Edward H., Cincinnati
Simpson, Frank E., Chicago
Smith, C. Morton, Boston
Sociedad Dermatologica Argentina
Buenos Ayres, S. A.
Sohn, David L., New York
Sol, Juan, Barcelona
Sommer Baldomero,
Buenos Ayres, S. A.
Spangenthal, J., Buffalo
Stelwagon, Henry W., Philadelphia
Stern, Samuel, New York
Stevens, Rollin H., Detroit
Stiles, Ch. Wardell, Washington, D. C.
Stitt, E. R., Washington, D. C.
Strebel, H., Munich
Sturgis, Frederick R., New York
Sumney, Herbert C., Omaha, Neb.
Swift, Homer F., New York
Swinburne, George K., New York

Tanaka, Tomoharu, Tokio
Taylor, G. G. Stopford, Liverpool
Taylor, Robert W., New York
Terzaghi Rome
Thibierge, Georges, Paris
Thorndike, Townsend W., Boston
Throne, Binford, Brooklyn, N. Y.
Towle, Harvey P., Boston
Trimble, William B., New York
Tucker, Edwin D., Toledo
Tyzzer, E. E., Boston

Unna, P. G., Hamburg
Urueña, Jesus Gonzales, Mexico City

Valdes-Morel, Alberto, Santiago, S. A.
Valente, Frederico, Lisbon
Van Harlingen, Arthur, Philadelphia
Varney, H. Rockwell, Detroit
Veiel, Theodor,
Cannstatt, Württemberg
Vermilye, Robert M., New York
Viñeta-Bellaserra, José, Barcelona

Wallhauser, H. J., Newark, N. J.
Ware, Martin W., New York
Weiss, Ludwig, New York
Welander, Edward, Stockholm
Wende, Ernest, Buffalo
Wende, Grover W., Buffalo
White, Charles J., Boston
White, James C., Boston

Whitehouse, Henry H., New York
Whitfield, Arthur, London
Wickham, Louis, Paris
Williams, Arthur U.,
Hot Springs, Ark.
Williams, Charles M., New York
Williams, Ralph, Los Angeles
Wilson, Omar M., Ottawa
Winfield, James M., Brooklyn, N. Y.
Wise, Fred, New York
Wolff, Alfred, Strassburg
deYelnitsky, Stanislas, Lodz
Zambaco Pasha, Constantinople
Zeisler, Joseph, Chicago
von Zumbusch, Leo, Graz

## DELEGATES

Dr. L. DeKeyser, of Brussels, for Belgium.

Dr. Carl Rasch, of Copenhagen, for Denmark and the University of Copenhagen.

Dr. Ricardo Suárez Gamboa, of the City of Mexico, for Mexico.

Mr. S. C. Maximos, Acting Consul in New York City, for Greece.

Dr. Félicisimo López, Consul-General in New York City, for Ecuador.

Dr. Ramón Bengoechea, Consul-General in New York City, for Guatemala.

Dr. H. Radcliffe-Crocker, of London, for the Dermatological Society of London.

Dr. H. Hallopeau, Dr. Paul Gastou, and Dr. Alex. Renault, of Paris, for the French Dermatological Society.

Prof. Erich Hoffmann, of Berlin, for the Berlin Dermatological Society.

Dr. Ambrogio Bertarelli, of Milan, for the Italian Dermatological Society.

Dr. Victor Endokimow, of Charkow, for the Charkow Dermatological Society and the University Clinic of Prof. Selenew.

Dr. A. I. Grünfeld, of Odessa, for the Dermatological Society of Odessa.

Dr. L. DeKeyser and Dr. Dubois-Havenith, of Brussels, for the Belgian Dermatological Society.

# Sixth International Dermatological Congress

Held at the ACADEMY of MEDICINE, New York City, September 9th to 14th, 1907

## FIRST DAY, MONDAY, SEPTEMBER 9TH

The morning session was called to order at 10.15 A.M. by THE PRESIDENT, Dr. JAMES C. WHITE, of Boston. He said that before proceeding to the exercises of the opening session of the Congress it would be necessary to take the usual preliminary steps for its organization, and he therefore asked the attention of the members to the report of the Secretary-General upon the work of the Organization Committee since the meeting of the Congress at Berlin in 1904.

By authority there conferred upon him, he had appointed to that important and laborious office Dr. John A. Fordyce of New York, who would now read the names of the Committee of Organization subsequently chosen, and of the persons selected to fill the various offices for this Congress, and he would ask the members at the close of the report to vote upon the ratification of these nominations.

## SECRETARY-GENERAL'S REPORT

DR. JOHN A. FORDYCE spoke as follows:

*Gentlemen:* The International Congress of Dermatology for the first time since its organization convenes on this side of the Atlantic. It is, therefore, a great pleasure to me, as Secretary-General, to say the first word of welcome, which I extend most cordially to all of our visiting members and delegates. Under our existing national, state, and municipal governments it is not generally customary to lend financial or other aid to international scientific bodies, so that failure to observe old-world methods must not be construed as indifference

on their part to the success of our undertaking. Mr. Roosevelt has kindly consented to greet the members through the Surgeon-General of our Navy, Dr. Rixey. The government medical services, too, are officially represented on our programme by papers prepared by the Surgeon-General of the Navy and others. Dr. Ira Remsen, President of Johns Hopkins University, will speak for educational institutions, and Dr. Joseph D. Bryant, President of the American Medical Association, for the medical profession of this country.

Invitations to foreign governments to be represented by delegates have been kindly forwarded through our State Department, and I take pleasure in announcing that the following gentlemen have been appointed to represent their respective governments:

Dr. Carl Rasch of Copenhagen for Denmark and the University of Copenhagen.

Dr. L. DeKeyser of Brussels for Belgium.

Dr. Ricardo Suárez Gamboa of the City of Mexico for Mexico.

Mr. S. C. Maximos, Acting Consul in New York City, for Greece.

Dr. Felicisimo López, Consul-General in New York City, for Ecuador.

Dr. Ramón Bengoechea, Consul-General in New York City, for Guatemala.

The following foreign societies send greetings through their delegates:

The Dermatological Society of London, Dr. H. Radcliffe-Crocker, of London; La Société Française de Dermatologie et de Syphilogie, Dr. H. Hallopeau, Dr. Gastou, and Dr. A. Renault of Paris; Berliner Dermatologische Gesellschaft, Prof. Erich Hoffmann of Berlin; Société Belge de Dermatologie et de Syphilogie, Dr. L. DeKeyser and Dr. Dubois-Havenith of Brussels; Societa Dermatologia Italiana, Dr. Ambrogio Bertarelli of Milan; Dermatological Society of Odessa, Dr. A. I. Grünfeld of Odessa; the Charkow Dermatological Society and the University Clinic of Prof. Selenew, through Dr. Victor Endokimow.

This Congress owes its origin to the request of a committee

elected by the American Dermatological Association and the Dermatological Section of the American Medical Association that the Sixth International Congress of Dermatology be held in America in 1907, under the presidency of Dr. James C. White of Boston. This invitation the Fifth International Dermatological Congress, which met in Berlin in 1904, was pleased to accept. Late in the autumn of the same year an Organization Committee representing 15 cities was appointed by Dr. White. In the following summer, one of the members, Dr. Charles W. Allen, from whom much was expected on account of his energy, linguistic accomplishments, genial disposition, and wide acquaintance, contracted typhoid fever after attending the International Medical Congress at Lisbon and died at Gibraltar. You will all, I am sure, share the deep sorrow caused by Dr. Allen's death. It is also with deepest regret that I refer to the death of Prof. Neumann of Vienna, Prof. Haslund of Copenhagen, and Prof. Tarnowski of St. Petersburg, Vice-Presidents for Austria, Denmark, and Russia, respectively.

The Committee has met at stated intervals, selected the themes for formal discussion, and completed the list of officers of the Congress herewith appended, with whom it has co-operated in every way in originating and carrying out preparations which attend an organization of this kind. The great success of the Berlin convention and of those which preceded it has been an added stimulus to American dermatologists to prepare a scientific and social programme which would prove acceptable to our visiting colleagues. The annual meeting of the American Dermatological Association was wisely omitted this year so that its members could concentrate their energies in behalf of this gathering. Whether we have succeeded in our efforts the work of the coming week will reveal. The Committee wishes to express its appreciation of the cordial responses to requests for papers, clinical material, and other assistance. Those who have been fortunate enough to attend former Congresses, since the first session in Paris in 1889, will not see such an elaborate exhibition of models, cases, or scientific apparatus. This time of the year, owing to climatic conditions, is not a very fortunate one for the exhibition of

clinical cases or bacteriological preparations, as very few practitioners are in town and most of the laboratories are closed during the summer. We have had in mind the demonstration of cases peculiar to this country, such as blastomycetic dermatitis and skin diseases which affect the negro. Unfortunately, when most needed, such cases are not at our disposition and we are not able to exhibit as many as anticipated. The number of papers announced on the programme is so large that it will not be practicable to listen to them all and a close observance of the time limit, with some possible exceptions, will have to be insisted upon.

It is a matter of great regret that so few of our foreign colleagues have been able to come. We have with us, however, delegates from Great Britain, Germany, Austria, France, Russia, Denmark, Belgium, Italy, Spain, Mexico, Australia, Japan, Greece, Ecuador and Guatemala; giving an international complexion to the Congress.

During the time which has intervened since its organization, we have had the earnest support of our foreign secretaries, to whom I desire to express my cordial thanks for their assistance in promoting the interests of the Congress.

A number of our colleagues who fully expected to be with us and contribute to our scientific programme have been unable to do so, by personal or family illness, and from many of them letters expressing regret have been received. They are as follows:

Prof. Neisser, Prof. Lesser, Sir McCall Anderson, Dr. W. Allan Jamieson, Dr. Pye-Smith, Mr. George Pernet, Prof. Doutrelepont, Prof. Finger, Prof. Jadassohn, Dr. Pringle, Prof. Pontoppidan, Dr. Oltramare, Dr. Mibelli, Dr. Besnier, Prof. Boeck, Prof. DeAmicis, Mr. Malcolm Morris, Dr. Darier, Dr. Sabouraud, Prof. Riehl, Dr. T. Colcott Fox, Prof. Ehlers, Dr. Arning, Dr. Buschke, Dr. Urueña, Prof. Kromayer, Dr. Lassueur, Dr. Rosenthal, Dr. Herxheimer, Dr. Engelsted.

I am sure you will all unite with me in thanking them for their wishes for a successful meeting.

Although the work of the past three years has been arduous it has been rendered much easier by the work of my predecessors in this office, and has had its compensation in opportunities

for pleasant relationship with a vast number of our colleagues in all countries of the world. Whatever measure of success may attend the Congress is due to the constant and painstaking efforts of its distinguished President, Dr. James C. White, who so carefully planned the endless details which are only known to those who have been intimately associated with him.

In the name of the dermatologists of America I wish you welcome to this country and city.

This report was read and duly ratified, together with the list of officers.

THE PRESIDENT stated that President Roosevelt, who had always shown great interest in all questions of medical science and hygiene, had requested the Surgeon-General of the Navy, Dr. P. M. Rixey, to offer a welcome to the Congress.

## FOR THE UNITED STATES GOVERNMENT: AN ADDRESS OF WELCOME

BY SURGEON-GENERAL P. M. RIXEY, UNITED STATES NAVY, REPRESENTING PRESIDENT ROOSEVELT

*Mr. President and Gentlemen of the Congress:* I have the honor and very great pleasure of extending a hearty welcome to you in the name of our President, and all that he represents. His regret at being unable to be present on this occasion, and his instructions to me to convey his greetings to you, as expressed in the President's own words, is best shown in his letter under date of July 11, 1907, from Oyster Bay, New York, which I now read:

"SIR:—I shall be glad if you will attend the meeting of the Sixth International Dermatological Congress, to be held in New York City, September 9th to 14th, 1907, and convey to it my appreciation of its invitation to be present and my regrets at not being able to accept. Please greet in my name the Congress, especially the foreign delegates, and wish them a most prosperous meeting.

"Sincerely yours,

"THEODORE ROOSEVELT."

In accordance with this letter, I extend to you a most cordial welcome from the President of the United States, representing as he does the various national medical services, as well as the whole people. I especially wish to extend this greeting to the delegates from foreign countries who have honored us by their presence, and I trust the occasion will be the means of forming many ties that may be mutually beneficial. The coming together of such bodies of men as I see before me this morning, experts in learning and specialists in the great field of dermatology, cannot but be productive of much good to suffering humanity, not only of this but of every country here represented.

The universal interest that our President takes in all matters pertaining to the welfare of the human race, whether it be physical, mental, or moral, is too well known and has been exemplified in his whole career too clearly to need from me more than a passing reference; but it may never be known how much he has been interested in and has done for the medical profession until one has been as intimately connected with this work as I have been. I therefore take this opportunity of saying that in the history of Presidents, I may say of rulers, there has been none who has been more interested in the progress of the medical profession, as well as every legitimate field of work, than Theodore Roosevelt. In the national field of medical work, of one branch of which I have the honor to be the head,—and consequently have had an intimate knowledge of the sister services,—I have the deepest sense of our obligations and personal love for the representative of a great people who stands for justice to all and has the firmness to see that justice accomplished, especially toward those physically afflicted. Those of us who have had charge of such work thoroughly appreciate what it is to have matters carefully weighed and justice done as it has been under our present President. I speak feelingly of all this. It means more than words can express to one who had come to the head of the Bureau of Medicine and Surgery of the Navy five years ago, which at that time was sorely in need of all that great advance which was being made by our civil brethren. An account of stocktaking at that time showed a corps of

medical officers one-half short as to numbers, no opportunity for advancement in their profession, and ground down by routine work; ships and hospitals, so far as the sick and injured were concerned, out of date and wanting in modern facilities for the care of those afflicted. We can now show a wide-awake working corps, with advantages in professional and even research work that may well be the envy of our civil brethren; a post-graduate medical school and a new naval medical school hospital at Washington; a number of new naval hospitals at home and abroad, and the old ones being modernized as rapidly as possible; our battleships and cruisers having space assigned to the sick and injured, fitted in accordance with modern methods. In addition to all this, the standing of the medical officer is on a fair basis; as with the Navy so with the sister services. All this has been accomplished, gentlemen, because we have had in the White House one who only needs to know of defects and injustice to overcome them. No wonder that I state here before you to-day that the medical profession has much to place to his credit, and in the future we can rely upon his hearty co-operation in any efforts for the general well-being. He takes a deep interest in all that concerns the medical profession, and, realizing our need for help and assistance, never loses an opportunity to strengthen and support us in the many progressive steps we have taken. So you may feel assured that he will take a special interest in the proceedings of this Congress, and joins with us in the hope that from its deliberations much good may be derived.

During the past twenty years the subject of skin diseases, which we have met here to consider, has received, with all other medical subjects, a great impetus. The introduction of laboratory methods has opened up a world of useful information, and especially to those of us in the Government services the period has been one of constant advance and discovery, brought about particularly by our advent into tropical and heretofore little known countries. So important has the subject become that we are now bending our efforts to perfect the members of the medical corps of the services in a knowledge of this specialty and to

equip them for practical and research work in all parts of the world.

I have been more than pleased at the active steps taken by this Congress to demand from educational institutions more careful consideration of the study of diseases of the skin; to require more study and deeper insight into this very important branch of medical science.

In our naval medical work I find upon investigation that the proportion of dermatological diseases to all others is about 13 per cent. This shows clearly how our interests must be in your special work, and, therefore, we seek as close an affiliation with the object of this meeting as is practicable. Following out this idea, we of the Navy, at our post-graduate medical school in Washington, are giving more and more attention to skin troubles, both in our didactic teaching and in the laboratory, and many of our most interesting reports to-day are on this subject, especially in connection with tropical medicine.

Once more I give you a most hearty welcome from our chief magistrate, and hope that this, the Sixth Meeting of the International Dermatological Congress, may be one long to be remembered for the good it has accomplished.

THE PRESIDENT said that all recognized the great importance of the relations existing between the university and schools of medicine; the elevating and fostering influence of the one, the completeness and strength afforded by the other. It was most fitting that the distinguished President of Johns Hopkins University of Baltimore, which had occupied so prominent a position in raising and sustaining the standard of medical education in this country, and was so conspicuous in the high character of the instruction it had given, should be asked to speak for all American universities. He took great pleasure, therefore, in presenting Dr. Ira Remsen.

## THE AMERICAN UNIVERSITIES

PRESIDENT IRA REMSEN said: I esteem it a great honor to be permitted to appear before this Congress and express a welcome on behalf of the universities of this country, espe-

cially to those members who have come from foreign countries, and I sincerely hope that the work of the Congress may in every respect be pleasant and profitable.

Why a representative of the American universities should be called upon in this capacity is a question that I have pondered over a good deal since I have been invited, and why I have been especially selected to represent the universities has caused me a little worry since I have been rash enough to accept the invitation. Personally, I have retained a certain interest in the medical profession because in my early years I became the proud possessor of the degree of M.D. My knowledge of medicine, however, is like beauty in one respect, only skin deep, and perhaps it was for that reason that I have been selected for this occasion. But to return to the question why a representative of American universities should be called upon to speak before a Congress of this kind. The reason for the existence of this Congress is research. The members have come together to discuss the results of their own researches, and the results of the researches of their co-workers. The universities are the training grounds of research; that point is perfectly clear. While research might be carried on to a certain extent without the university, after all, its success depends primarily on the university. This fact has come to be recognized in medical circles in this country, and there is at present a well-defined university movement among the medical schools.

Not many years ago, the relation between the medical school and the university was largely nominal. There is, to be sure, a medical school at Harvard, and one in New York, the College of Physicians and Surgeons—of which I am an alumnus—which is connected with Columbia College, but the connection between the two was formerly only nominal. During the past twenty-five years, however, this university movement has acquired a great momentum. The universities are taking possession of the medical schools, and the medical schools are trying to get under the cover of the universities. I am afraid if this movement keeps up there will not be enough universities to go around, for there are a large number of medical schools that now recognize the advantages of a

university connection. What are those advantages? That is a broad question, and I will not attempt to answer it in the few minutes at my disposal, but will limit myself to a few words on this subject. It is perhaps not clearly recognized by all, but by the leaders in the movement it is recognized that the atmosphere of research is the best atmosphere for teaching, and that I take to be the fundamental point in connection with this university movement. This fact is recognized in most countries, and is coming to be recognized more and more in this country.

Another reason why the medical schools are coming under the university banner is this: Not long ago, the medical school was a profitable business and it was kept up partly for that reason. But that day has gone or certainly is going, and the fact has become apparent that it is very expensive to properly conduct a medical school. It requires money and it requires endowments, and none can hope to survive without these. The medical schools and the medical departments of universities are now on the same footing as are other kinds of higher education. The old-fashioned medical school can not hope for any endowment in the ordinary course of events, whereas the universities have been fortunate enough to receive them. There are therefore two reasons why the relationship between the medical schools and the universities is becoming closer, and because of that fact there is perhaps some reason for inviting a representative of an American university to appear before this Congress, the work of which is wholly given to medicine.

THE PRESIDENT said that Dr. Joseph D. Bryant, the President of the American Medical Association, some 67,000 strong, would now welcome the Congress in the name of the medical profession of the United States.

## FOR THE MEDICAL PROFESSION OF THE UNITED STATES

DR. BRYANT made the following address:

*Mr. President, Distinguished Guests, and Members of the Sixth International Dermatological Congress:*

I am delighted and honored by the opportunity of greeting

you and extending the fraternal welcome which the members of the American Medical Association gladly bestow on all those who labor in the advancement of medical attainment and for the relief of human affliction. And I hope that I may, with perfect propriety, also greet you in behalf of the medical profession of the country, of which there are about 112,000 whom we may regard as scientifically anointed brethren. Consequently, the very many extend to the comparative few the joyous welcome akin to that with which the expectant family circle greets the homecoming of a highly esteemed and honored member of its own number. To the branch of our professional family which you so fittingly represent, belong infinite praise and profound congratulation because of the eminent success which has attended your efforts, in a difficult and often perplexing field of professional activity. For the especial part of the human body to which your attention and skill are directed is the one most often associated in the human mind with peculiar feelings of pride and an abiding sense of gratification, so long, at the least, as "beauty doth banish age." Sometimes no doubt the brightest hopes in your professional endeavor are clouded by the misconceptions of the fairminded and the murmurings of the discontented, relating to cosmetic prospects of uncertain tenure or of established outcome.

Let us, however, soften the sombre aspects of this picture a bit by emollient facts as expressed by the poet (Gay) who said:

> "In beauty faults conspicuous grow;
> The smallest speck is seen in snow."

We should, however, remember that in this connection misgiving and prejudice disappear and thankfulness rules, as the rewards of gratitude and duty come into view.

The welcome on this occasion is no less pronounced nor deserved because of the facts that in professional communion with each other you will speak blithefully, and seemingly with mutual understanding and with untripping tongue, in a professional language whose classified forms of expression often

startle the unsuspecting, astonish the unsophisticated, and torment the wise.

The amplitude of the welcome which we extend to you is as broad as our country and as deep as is its substance, therefore, comparatively as broad as is the field of your professional activities, and as deep—reaching from the surface to the centre, from the skin to the stomach, as illustrated by the co-operative activity of the pernicious pie and the persistent pimple—marking time together.

We expect much of you, we, who have been so bountifully served already, in personal welfare and comfort, yet are inclined to desire more. And that our wishes in this regard will be realized in a beneficent way is emphasized by the scope and scientific fertility of the program of professional attainment placed before us for consideration.

Those who came from abroad, we especially desire will remain long enough with us to know more of our great country and of its people, to pay homage to the prodigal manifestations of nature's labors which everywhere beautify and dignify this broad country of ours. You have lofty peaks, so have we; you have wide rivers, beautiful lakes, and health-giving springs, so have we in profuse abundance. You have broad plains and fertile soil and abundant crops, so have we, broader plains with fertile soil and abundant crops, tilled and beautified by the poor and the oppressed of all nations.

And now, kindly pardon what I trust is an excusable pride in requesting that you note the professional attractions of the building in which you are assembled, and heed the lesson which it teaches. Note the extent of its medical library second, I believe, to but one in our country, remembering the while that this creation is an earnest of the power of local cohesive harmony begotten of professional pride, is fostered by lofty civic and professional purposes, and stimulated in contented advance by a completed membership of 1000, supplemented by a rapidly increasing waiting list.

The 67,000 members of the American Medical Association individually and collectively extend to those of other lands and of their own a most cordial greeting. They bespeak your earnest consideration of the plans and purposes of the American

Medical Association, and invite your encouragement and co-operation so that in the near future the medical profession of the world shall act with conspicuous harmony in all matters making for the health, the contentment, and the security of the people.

And, finally, the flight of my allotted time for this occasion prompts me to request that you will honor us again with your presence, ever remembering to

"Come in the evening or come in the morning;
Come when you are looked for or come without warning";

and that you will be welcome.

## ADDRESS BY THE PRESIDENT OF THE CONGRESS

DR. JAMES C. WHITE :

*My Colleagues from far and near:*

It is my high duty and privilege to greet you in assembly, to welcome you to this Sixth International Congress of Dermatology, and to all of you, my countrymen and residents of other lands, who had share in placing me in this most honorable office, to offer my sincere thanks.

Many of you are passing through novel experiences; you have been living on the vast tracts of ocean, and have learned how small a part of the world are the spots of earth you call home. You have come to a new and younger land and may be expecting to find much that is strange to you. If you travel far over our vast continent you will indeed see a great diversity in its peoples, immense inland seas, rivers which in size dwarf your own to brooks, enormous chains of towering mountain peaks, lofty cataracts and deep cañons, marvellous basins and geysers, and magnificent forests of ancient and gigantic trees, overtopping even our heaven-aspiring, Babel-like edifices. We trust you will visit them all. But in your friends and colleagues who stand here on the edge of this new world to meet you with open arms and warm hearts, and who will try to make you feel that this magnificent city is another home to you, you will find nothing novel or strange. We are just as yourselves. In no other land could a great congress

be held where visitors would find so close a tie of blood kinship in their hosts.

You Germans and Austria-Hungarians will see right around you more of your race than in almost any city of the Fatherland. You from Holland will find in this town they founded representatives of your oldest and purest families still. You Latins will read the names and hear the tongues which will make certain districts seem as if you were at home again. You Frenchmen may live here as in France, eat the dishes of your best chefs, see such masterpieces of modern French art as you will scarcely find at home, and associate with the best old Gallic stock in our many Huguenot families, and in one of our States, founded by your enterprising ancestors, your old names, your old customs still flourishing. And you of the North, repeating the Viking's earliest voyage to the West, will find in our central regions three mighty States, called New Scandinavia, with an imported but dwindling remnant of your old enemy, Lepra. As for you of Great Britain, are not you and we mostly of one and the same motherhood? Shakespeare and Bacon, Alfred and Elizabeth, and hosts of other illustrious names are as much our ancestors and those of our near and dear sister Canada as they are yours, and far more speak here the common mother-tongue than on your own soil.

Here, then, and in the American part of this Congress you will all find representatives of your own nationalities; moreover, in some of us the solution of that interesting question in ethnology—What is the outcome of a mixture of these leading races of mankind?

And no doubt some of you have been wondering on your way hither, what sort of physicians, what sort of dermatologists, shall we find in these men of the Western Continent? Some of you, 't is true, have met some of us in Europe and have, no doubt, read some of our writings; but all of you do not know all of us in this way, and you perhaps do not know us and our literature as well or as generally as we know you and yours. It is one of the most important functions of this international league to promote our mutual acquaintance. Now there are no great differences between us, you will find. I have just alluded to the identity or similarity of

stock. How has professional training affected it? I need not speak of our common schools or of the academic departments of our universities. I grant that yours may be a little more thorough, as the influences of ours are more generally diffused. The period of required professional study is longer with you than it has hitherto been with us, but now the best educated young men amongst us do not obtain their degree of Doctor of Medicine before they are twenty-six or twenty-seven years old; and after that may come further study in European schools. We may all alike read the works of the great masters in medicine of all nations. We have at home only too many medical schools; we have one hundred and twenty-five professors and teachers of dermatology. We have large and well equipped special laboratories and clinics, perhaps the largest and most magnificent medical school building in the world, and we have produced some admirable and exhaustive treatises and countless papers on dermatology. Most of our teachers have had the advantage of studying our subject with the most distinguished teachers of Europe, living and dead. You see, therefore, that you should find us very much the same as yourselves, and that we meet as equals, alike prepared to study and discuss the questions and cases which shall be presented for our consideration, and equally desirous of contributing to the advance of our department of medicine. In one point we may indeed find ourselves your inferiors: in our efforts to repay in the same measure the grand hospitality you have so often shown us. But this failure shall not come from any lack of desire or effort on our part.

Permit me to offer you a brief sketch of some of the changes which have taken place in the study and practice of dermatology under the observation of the oldest student among you in the last half century. In 1856 and 1857 I sat in the clinic of Ferdinand Hebra in Vienna, that marvellous training school of future dermatologists. I took with me to Europe a clean slate, for at that time no instruction in skin diseases worth mentioning was given in America; therefore, that terribly iconoclastic feature of his teaching was needless for his transatlantic hearers. It seemed to me then that this ticket admitted me to an almost perfect system of object-lesson instruction,

given by a master of keenest observation, of merciless invective toward the schoolmen of the past, of enthusiasm-inspiring earnestness. No one could fail of learning a great deal under such teaching. I still believe it deserved and still deserves the title unparalleled. We were taught to observe closely what we saw, and to waste no time in attempting to classify the result of such observation under undemonstrable etiological or pathological theories; moreover, to treat lesions by remedies addressed as immediately as possible to them and not to imaginary causes. Treatment, therefore, was purely empirical. We did try to look a little below the surface of the skin, and a limited number of parasitic affections were then recognized. We did take portions of diseased cutaneous tissue, and under Professor Wedl's directions tease them out into shreds under the microscope. We had not then arrived at the knowledge of infinitely attenuated section-cutting, of chemical reactions beyond the solvent power of potash, or of the innumerable, discriminating stains of to-day. No wonder, then, that we failed to recognize the all-present foreign organisms beneath our very eyes. At that period the school of Vienna was at its highest mark, and under such men as Skoda, Rokitansky, Oppolzer, Hyrtle, and Sigmund, one had unsurpassed advantages of instruction in other branches of medicine.

Paris was then beginning to lose that supremacy she had so long held undisputed as Vienna rose. There Hardy was giving excellent instruction. Bazin was possessed by his overmastering theories of dartrism and the like, and Ricord still reigned as the unrivalled teacher in syphilis. Wilson, with his fluctuating views on etiology and nomenclature, was the sole authority in English-speaking countries. Simon was in Berlin; Veiel, Sen., in Cannstatt; Boeck, Sen., in Christiania; and Fuchs had just died in Göttingen. These were our worthy predecessors in dermatology fifty years ago. There were but few professorships and clinics, and no special laboratories. The literature of our subject was scanty. Hebra had as yet published no book but his surpassing Atlas, and there were no journals devoted exclusively to the interests of our department.

In America dermatology was scarcely recognized as a

specialty. No systematized instruction in it was given in any school of medicine. There were no special clinics connected with them, and in our hospitals no wards for the treatment of skin diseases. There was hardly a physician exclusively engaged in the practice of this class of affections. All these opportunities for the study and teaching of dermatology had to be created. It has been a long and hard struggle to overcome the opposition on the part of the general profession, the governing boards of hospitals, and the faculties of our medical schools to the position of dermatology as an independent department of medicine. One obstacle has been the unfortunate fact that the universities had no hospitals under their control, no clinical material to offer their appointees. Then, too, our National Government has no share in the direction either of universities or hospitals, so as to regulate or unify medical education. Therefore, this struggle for recognition on the part of your colleagues in the United States had to be made single-handed in every hospital and every institution for medical education. It is not yet quite wholly over, but we may rejoice in great advances. Nearly every one of our one hundred and sixty or more schools of medicine gives special instruction in dermatology, most of our large hospitals make at least provision for out-patients with skin diseases, a few of them have wards for their exclusive care, and all our cities and towns of magnitude have practitioners of this specialty. We have a National Dermatological Association, now thirty years old and numbering sixty associates, a large Dermatological Section in the American Medical Association, and many of our most important cities have local dermatological clubs or societies, all of whose proceedings are published. Then, too, we have long had (under various titles) an *American Journal of Cutaneous Diseases*. There have been published also extensive treatises, cyclopedias, atlases, and monographs by American workers. You see, therefore, that we do not stand so far below the standard of activity you, our colleagues from abroad more favored in opportunities, have set for us.

The attention of our American school was first directed to determine what difference might exist between dermatoses here and in Europe—how far, that is, they might vary on account

of diversities in climate, racial stock, methods of living, morals, dietaries, etc. For this purpose a careful collection of statistics has been made by members of the American Dermatological Association representing observations made in all parts of the United States and Canada. The number of cases thus collated amounts to more than half a million. Their value is exceptionally great and reliable, because they are founded upon the observation of trained dermatologists. A study of them reveals some striking features: the almost complete absence of some affections common in Europe, the occurrence here of others only by direct importation, a variation in the intensity of certain pathological processes, even an inclination to self-extinction in some of them, and the existence here of certain diseases not occurring elsewhere. In recent years our efforts have been especially directed to the foundation of laboratories devoted to research into the essential nature of skin diseases. The results of such investigations are already of high importance and promise.

The recognition of the importance of such researches has completely changed the methods of teaching dermatology amongst us. We are no longer content with those of our former great masters,—the didactic lectures in course, a rapid survey of the whole field of cutaneous medicine, with clinical illustrations, it is true, but scanned mostly afar, and at close view only by the fortunate holders of the first row of seats or by the most successful rushers of the crowd around the bedside. The medical student at our best schools takes up its study after two or three years' laboratory drill in histology, biological chemistry, pathology, bacteriology, and all practical methods of microscopy. He comes thus prepared to apply this knowledge to the proper understanding of the wide pathological panorama which skin diseases present. He makes himself familiar with their clinical features by sight, by touch, in sections, or classes of a few members, three to ten only. He sees what the biopsy reveals of anatomical changes, and what bacteriological researches may discover. He must elucidate the history of cases, and give the grounds for the diagnoses he must present. All this study is carried on in the immediate presence of the instructor, who directs and criticises at every

step in the clinic and laboratory. Such is the individual system of teaching dermatology to-day with us. For graduate students greater facilities are furnished, work in special laboratories, and the study of great numbers of clinical cases for eight hours of the day throughout the year under the constant supervision of instructors. Such modern methods of teaching cannot fail of yielding a superior product to those of our student days.

With this brief sketch of the evolution of dermatology in North America during a half century we may well note the changes which the same period has brought to pass in our department everywhere. European schools have risen and declined in popularity with the coming and passing of celebrated teachers. The days of narrowing theories and schoolmen have gone forever, let us hope. In their place we have the marvellous revelations of modern chemistry, physics, and the microscope, tangible data for the basis of our etiology and pathology. We may now credibly predict what we are about to discover in both these directions when our knowledge of methods shall have advanced a little farther. We see no bounds to the extent of such discovery. In an address delivered thirty years ago I ventured to predict that I should live to behold with my eyes the cause of pulmonary tuberculosis; of its cutaneous forms we had then no suspicion. We now look backwards upon this memorable event. When our great master of cellular pathology was giving some of you his inspiring instruction, who thought that he might some day come to distant and primitive America to see upon a screen, simultaneously with a thousand other observers, the image of a cell a foot in diameter filled with visible organisms of that scourge of mankind, variola? Even our trained imagination cannot bear us forward to the limit of such revelation.

When I began the study of skin diseases under Professor Hebra there were upon his tabular list of diseases less than one hundred titles. Since then closer clinical observation, advanced knowledge of their anatomical nature, recent investigations into their etiological relations have individualized and multiplied them until they now number more than two hundred. At the first meeting of this International Congress in Paris,

in 1889, a previously unnoticed disease, discovered simultaneously and independently in France and America, was first brought to your attention. Now we are able to show other dermatoses with which some of you are unacquainted.

Perhaps a word of caution regarding the unnecessary division of diseases and multiplication of titles may not be out of place here. It seems to me that some of us are over-inclined to magnify the significance of slight clinical variations, to attribute to them specific importance, and to emphasize their pseudo-independence by bestowing upon them titles of individuality. In my opinion we should not change well established landmarks except for reasons founded on demonstrable differences in anatomy or etiology. Then, too, the character of modern titles has become a matter worthy our serious consideration. It has become too complex and cumbersome, as has the nomenclature of other departments of natural science. There was a time when naturalists were content with simple generic and specific names; now every flower or bird must have at least three or four individual titles bestowed upon it. Are we not in danger of exceeding even this redundancy? There is evident a disposition to avoid such profuse and exhaustively descriptive nomenclature by calling a newly established dermatosis by the name of its sponsor, as Bazin's disease, Kaposi's disease, etc. Some fifty of such titles might be enumerated. This is an entirely arbitrary system of designating a disease, suggesting nothing descriptive of its nature, or its proper position in any plan of scientific classification. If it continue, a pocket glossary will soon become necessary to every reader of our literature, unless blessed with an exceptional memory. Such titles, like those geographical names given to affections of remote regions, may be admissible until the nature of the disease be fully elucidated; then they should be properly christened and registered. It should be one of the most important functions of this international body to prepare and officially adopt some satisfactory system of classification and nomenclature, to which we should adhere for the common good. I believe the creation of a standing committee of this association to consider the subject n a broad way, on which should be representatives of all our

great nations, unprejudiced by past systems of schools or individuals, would result in vast advantage to dermatology. The establishment of such an international code should not be an impossibility. Let us undertake it.

And are there not other matters coming within the bounds of our field of medicine, which we, as the most competent body in existence, should take a more prominent part in than heretofore? Should we not feel it incumbent upon us to assume a more advisory and executive position in relation to sanitary questions of international interest, rather than the merely academic one we have hitherto occupied? Had we conscientiously interpreted our highest functions in this direction, it would scarcely have been necessary to found a special international congress for the study and control of leprosy, of syphilis, and of cutaneous tuberculosis. But even if we have allowed our sphere of usefulness to be thus curtailed, there yet remain many important questions for us to act upon. I will mention some of them:

1. What are the influences of race, geographical conditions, climate, national customs, etc., upon the evolution and type of diseases of the skin?

2. What variations does emigration induce in dermatoses?

3. What cutaneous affections should national governments regard as infective, and seek to control by restriction of immigration, by enforced insulation, and similar measures?

4. How far is it practicable and incumbent upon national governments to control the continuance and prevalence of hereditary dermatoses by restriction upon marriage laws?

5. Should not the influence of this body be directed to induce governments to aid in the support of researches bearing upon sanitary questions of international importance?

We must all alike be greatly interested in the investigations which have been recently carried on by our colleagues in certain tropical regions which are of vast importance to dermatology and general medicine. We are fortunate in having before us the great privilege of hearing the results of their researches directly from some of the most eminent of them. Primarily these studies have been undertaken so far from the usual centres of such research, because there only could be found

available in sufficient abundance the requisite material. Fortunately, we are not yet differentiated so widely from our simian relatives in the physical character of our tissues, that we do not possess in common the susceptibility to the invasion of certain morbific agencies, which are the cause of some of our most disastrous diseases. As their serious nature inhibits the application of the ordinary methods of experimentation to our fellow men, it is indeed fortunate that we may legitimately use these lowly brethren for such purposes.

With the important studies concerning the nature of the variolous affections made at the same time in Manila by Drs. Brinckerhoff and Tyzzer you are acquainted. (Their results are published in the *Journal of Medical Research*, January, 1906, under the title: "Studies upon Experimental Variola and Vaccinia in Quadrumana.") I am happy to announce that Dr. Brinckerhoff has accepted the appointment from our National Government of medical director of the establishment for the care of lepers in the Hawaiian Islands, and will devote himself for five or ten years in the laboratory he has established on Molokai to the study of this disease. These researches, unrestricted in scope, conducted by so accomplished an investigator, are of great promise.

And there are not a few other affections of close interest to us of which we see only an occasional immigrant example, which can be properly studied only in their tropical home, and should be there studied by experienced dermatologists. It is evident that such researches cannot be carried on at the personal expense of such investigators, or by any one national government on a sufficiently comprehensive basis. It can be accomplished only by the combined efforts of the medical profession of all nations. Now, fortunately, we have in this association just the right body to carry out this all-important work. Such an undertaking on our part should be regarded as one of our most appropriate and essential functions. A large fund should be raised, and the aid of our respective governments should be solicited in behalf of the plan. An international committee, composed partly of members of this body, partly of well-known authorities on tropical diseases in all parts of the world, might be established under our adminis-

tration, which should raise the means for and superintend such investigations. Think of the vast benefit to medical science if we could send out properly trained investigators to any regions where questions of great interest and grave international importance demanded solution. May I suggest that a committee be appointed at this meeting to consider the subject and to report before the adjournment of the Congress?

Looking backwards over my fifty years of study and practice in affections of the skin I am led to ask myself: What are the most prominent marks of progress I have observed, and what the present signs of promise are?

I recognize three distinct eras of advance:

1. In place of the artificial systems of classification based on such narrow lines as similarities in external manifestations, especially in the so-called "primary lesion," a superstitious belief in the existence of purely imaginary influences or diatheses as a foundation of etiology, and a survival of the old doctrines that all dermatoses are necessarily merely surface expressions of internal systemic disorders, and that the cutaneous tissues are denied the possibility of independent pathological modification; in place of such an unscientific status as then prevailed there came about, largely through the powerful teaching of a great master, a proper appreciation of the meaning of external manifestations and a regrouping of the mutual relations of individual affections, the recognition of the pathological independence of cutaneous changes, and a healthful skepticism with regard to undemonstrable creeds; a school based on purely clinical data was inaugurated, an immense step upwards, an emergence above the clouds of superstition and fetishism.

2. Under the analytical spirit infused into all departments of medicine by Virchow, students in dermatology did not long remain satisfied with the old methods of studying the anatomical changes which underlie the surface expressions of cutaneous disease, but with the resources of improved technique carried their researches into the minutest details of tissue modification. Thus was built up a knowledge of cutaneous pathology, by which some sort of scientific classification became possible. It was one of anatomical affinity,

of identity of structure in the place of one founded on merely external resemblances. This was, indeed, a great advance, but far from satisfactory. It might show that the tissue changes in lupus and leprosy, for instance, closely resembled each other, but not why they clinically were so far apart. It gave not the slightest clew to their etiological relations.

3. There was revealed to one or two patient investigators through advanced methods of technique the presence in the tissues of these two most important diseases of foreign organisms, which explained all the phenomena we had been so blindly observing. This was the key to the secret of causation which had so long baffled us. I need not dwell upon the all-importance of this discovery, and the constantly increasing development in methods of research to which it has led. It has already taught us a vast deal as to the real nature of cutaneous disease, the means of controlling some of the most dangerous forms of pestilence, and given us the hope of solving the mystery of much or all that yet remains unrevealed to us.

These, then, are the three eras of advance within my experience:

1. The knowledge founded on a more careful study of the external manifestations and unbiased interpretation of clinical phenomena.

2. A deeper knowledge of the minute anatomy of tissue changes in, and a more scientific grouping of, dermatoses.

3. The recognition of the real nature and cause of visible lesions and underlying tissue changes and the essence of disease,—a true system of pathology,—the promise of attainment of the power of prevention, of establishing immunity, of founding a broader system of rational therapeutics.

And how shall we interpret the action of the micro-organisms which have been found in so many cutaneous diseases, or which our justifiable convictions forestall the revelation of their existence in others, to such an extent that the remainder will be the exception to such etiological relations? The effects of parasitism on the cutaneous tissues of our earlier experience were purely local and simply inflammatory in character. The trauma of animal parasites produced a slight degree of superficial dermatitis of the immediate surrounding area, sometimes

followed by widespread secondary disturbances in consequence of the pruritus thus excited and subsequent scratching. The then known parasitic flora excited also purely local changes in the skin and appendages of unimportant nature. Neither animal nor vegetable forms gave rise to any constitutional disturbance, or endangered life.

Then came the demonstration of the existence of other forms of parasitic organisms in the tissues of far more serious diseases, the etiological relations of which have been established on irrefragable evidence. The tissue changes produced by their presence, both local and remote, and their influence upon their host are of the gravest character, some of them in fact being the cause of the greatest mortality in mankind and other animals within historic times. How can we account for such deadly influences inherent in such infinitely minute organisms, or for the striking differences in the nature of the manifestations they give rise to, in their periods of incubation, the diversity of tissue changes they cause, their variations in course from a few days to many years? Here are two so-called bacilli of minute size, so like in appearance and reaction under known reagents that they can scarcely be distinguished by the most experienced observers, yet just as the human ovule or the plant germ carries with it the inherent capability of building up from the material furnished it the stately tree with its century changes, or the heroic future of a man, so does the micro-organism of lepra bear within its simple and insignificant form the power of transforming human tissues into the fell shape we know; and so does the other possess the undeveloped power of causing the cutaneous tissues to express the influence of its presence in quite different objective forms, and of adding countless victims to the "great white plague." Some of them, too, have a mysterious power of protection, of bestowing immunization upon their human host.

How shall we, I repeat, explain such manifold and far-reaching powers? Can they be mechanical, in part, at least? When we consider the effect of the smallest particle of foreign inert matter upon human tissues at times, the "spec" in the eye for instance, we cannot deny the possibility of such sort of action, in some measure, at least. Can they be chemical

in nature? We have only to recall the influence of organisms but slightly higher in the scale of vegetable life, in producing new and beneficial modifications in organic compounds,—the alcoholic and acetous fermentations, for example; or of the most disastrous nature, as some of the oidia. We may feel assured that they, too, may possess the inherent property of generating products too subtle to be recognized by our limited analytical agents, and well capable of producing all grades of tissue change in their immediate presence, as well as those which express themselves in other ways throughout the whole economy; or is there some other subtler form of influence at work, the nature of which is wholly unrevealed?

To such remotely manifested influences we give the name toxins, a well chosen title, perhaps, but bearing in itself no interpretation of their nature. To such mysterious powers we may attribute the prodromal and evanescent cutaneous manifestations in lepra, and the long-delayed surface lesions in tuberculosis we call tuberculides. In the solution of this grave question—the nature of the action of such micro-organisms upon human tissues—we have before us an untrodden field of research. The satisfactory answer may be surely expected, for there is no secret of nature which human intelligence may not eventually comprehend.

### THE RESULTS OF OUR KNOWLEDGE OF MODERN CUTANEOUS PATHOLOGY ON PRACTICAL THERAPEUTICS

Is it not lamentable to confess how loitering has been the advance in practical therapeutics upon our recent progress in the knowledge of cutaneous pathology? We are wellnigh as helpless in the control of our gravest as well as of our most common dermatoses as we were half a century ago, and our most successful therapeutical measures are as empirical in nature as they have ever been. A few until recently unrecognized physical agencies have been employed, working some good, and evil as well, but we are learning that their beneficent powers have narrow limitations. We have recognized the parasitological nature of more and more affections, but our parasiticides can control only the most superficial of them.

So far, our researches in the portentous realms of immunization have not brought forth such practical results as did the shrewd, unaided observations of that old English country physician, Jenner. Can we predict with certainty the curative results of our prescriptions in any individual case of eczema, or psoriasis, or lichen, or acne, or the other common dermatoses which fill our daily clinics, results which convert our most confiding private patients into doubters of our skill, and give encouragement to the ingenious efforts of the nostrum manufacturers? Have we any power over the pigment producing layer of the cuticle? Can we control the disordered actions of the sweat glands? Who claims ability to cure lupus erythematosus, not the one case, but every case? Have we a surer power over the deeper and graver forms of cutaneous disease than the surgeon's hand of fifty years ago?

Now I am not a pessimist in therapeutics. I know that the skilled dermatologist does a vast amount of good in the relief of human suffering, and is fully as successful in dealing with disease as physicians in other fields of practice. Unfortunately for us the immediate results of treatment are always in view. Still I believe in an honest recognition of our present limitations as one of the steps towards securing greater powers of control in the future. I look forward with assurance to the slow coming of successful and rational methods of cure, of which a few happy glimpses have appeared.

## PROGRESS

Even since the last meeting of this Congress in Berlin there has been a noteworthy progress in dermatology, especially in research work. The great activity and general interest in this direction are shown by examination of the current literature in connection with a single question. The discovery of spirochæta pallida, its etiological relations to syphilis, and its revolutionary bearings upon the pathology of this disease, have stimulated the production of several hundred articles from observers in all parts of the world. The transference also of the field of investigation in this and kindred diseases from man to his nearest relatives in the animal creation has

led to surprising and most important results. Your Committee of Organization has selected, therefore, as themes for special consideration such subjects as will enable distinguished workers in these fields of research to present to you the results of their latest investigations and conclusions.

You are all familiar with the self-sacrificing spirit in which our distinguished colleague, Professor Neisser, has devoted himself—time, revenue, comfort—to the study of this most important subject, syphilis. How he transferred the field of his investigations from his clinic and observations upon human patients to the distant tropics and the home of the higher apes. You know the invaluable results of the experiments there made. You have read also in his recent report to the German Government the details of this work. He was to have been with us on this occasion to present his latest conclusions from the results thus obtained, but alas! in obedience to the call of that government, which has generously appropriated 100,000 marks for the continuation of these investigations, he has again banished himself, with his devoted wife as co-laborer, to the Orient, and sends us a message of his regret that he cannot be present with us. What an example of clinical experimentation on a grand scale, of noble devotion to science and humanity! Will you, his colleagues from all parts of the world, join in sending him our best congratulations upon his continued good health, and a sincere expression of our high appreciation of his all-important labors?

And I would say a word, too, for those dumb relatives of ours, the anthropoid apes, who show their near affinity to us by their susceptibility to this great curse of mankind. Would they could comprehend our grateful appreciation of their passive sacrifices for humanity!

And I cannot close this brief account of most recent progress without alluding to another therapeutic agency evolved from research work in the field of micro-parasitology, the protective and curative influence of the introduction of the modified essence of disease-producing germs within the economy, which we call opsonism. This subject will also be presented by competent observers.

In the face of such surprising results of research in the

past few years, how inadequately can the keenest imagination foretell the possible progress of the coming decade!

The marked increase in the number of dermatological societies in all civilized countries, some twenty or more existing at present, and the twenty to thirty journals devoted exclusively to the literature of our specialty bear witness also to the progressive interest shown in dermatology, so that it has become wellnigh impossible to keep in touch with such a record. You may be surprised also to learn that the number of invitations to attend this Congress, sent only to those especially interested in our department of medicine, is twenty-five hundred.

### NECROLOGY

But, alas! it is my sad duty to make brief mention of those who have hitherto worked with us, and who have left us forever since our last meeting:

Neumann, Barthélemy, Tarnowsky, Haslund, Du Castel, Mauriac, Finsen, Schaudinn, Atkinson, Greenough, Allen, Dron.

Some of them were among our most distinguished colleagues, who had labored long and nobly for science and humanity; others were only at the beginning of their brilliant career, already illuminated by splendid achievements—one of them, Allen, a lamented member of your Organization Committee. During my professional life some forty conspicuous colleagues in our specialty, some of them the great masters, have died. May I ask you to rise for a moment in respect to their memory?

### CONCLUSION

And now in closing I invite your attention to the full and inviting programme which the Organization Committee has prepared and placed in your hands. They have solicited contributions upon the most important subjects from distinguished dermatologists of all countries, and if we have not met with that degree of generous response from our foreign colleagues we expected, we hope with the aid of those who honor us with their presence to make the Congress a success.

*Adjournment at 1 p. m.*

## Afternoon Session—3 p. m.

Dr. Edward L. Keyes, of New York, Vice-President, in the chair.

# PROPOSALS FOR DIMINISHING THE DIFFUSION OF LEPROSY

By Prof. Robert Campana, of Rome

*Résumé:*

Considerations regarding the nature and special symptoms of leprosy lead to the conclusion that a mutual understanding should be arrived at amongst civilized nations concerning the treatment of this disease and its aspects as an evil which affects the individual and society.

Local treatment is necessary in leprosy in the initial stages of macular and tubercular symptoms. These can be arrested by radical surgical treatment, followed up by cauterization. The most rigorous aseptic and antiseptic treatment of the ever-varying lesions is indispensable, according to the manner in which they are developed in the patients, and this is especially the case in the later stages of the disease.

Tubercular leprosy is a purely local disease of much gravity, and its contagiousness, which has been proved experimentally, is in direct proportion to the shortness of the time that malady has lasted. Hence the radical treatment of the disease is to destroy its manifestations as soon as they appear. The severe mutilations and the grave febrile and phthisical phenomena which may occur in leprosy are the consequences of septic conditions caused by ulceration and trophic changes. Hence the treatment of patients in whom these lesions have occurred ought to be directed towards diminishing the injurious effects of these trophic changes, those of the joints more particularly, to prevent breaches of surface, and to arrest

the continuance of sources of sepsis in the individual patients and in their houses and in leper asylums. When the phenomena of sepsis have occurred, the suitable treatment is to attack them courageously, studying when possible the special nature of the various sources of sepsis, and in abating them to bear in mind the unusual conditions of the patients in whom they have developed.

The bacillus lepræ, dead or alive, remains in the tissues for a long time. Its presence is more easily demonstrated in the initial period of tubercular leprosy than in the advanced stages or during the period of resolution. Very often the organism is absent, owing to the spontaneous exhaustion of the infection, though macroscopic evidences of the disease may still persist in the skin and other organs affected.

*Discussion*

Dr. Douglass W. Montgomery, of San Francisco, said he did not understand Prof. Campana's point of view that a patient, when once discovered to have leprosy, is no more a menace to society. As a matter of fact, it is frequently difficult to establish the source of infection, and personally he could recall but a single instance where he was able to do it. The patient was a woman who was born in Ireland, and who had resided in New York before going to San Francisco. She was a well-marked leper, although her children and husband were free from that disease. Investigation showed that this woman had harbored in her home a well-marked leper from Hawaii, and he had no doubt that this Irish woman had contracted her leprosy from that man, as he had lived in the same house for quite a long time. The case was one of tubercular leprosy in full bloom, so that he thought this case showed conclusively that Prof. Campana's view, that a patient when once discovered to have leprosy is no more a menace to society, is incorrect.

Dr. Montgomery said that, so far as the first evidences of leprosy are concerned, the physician rarely sees them. He could recall only a few instances where he was able to observe and follow the early erythematous patches of the disease, but such instances are rare. The early symptoms are such that the patient himself does not usually attach much importance to them, and it is only later, when the disease is well established, that medical advice is sought.

A long period frequently elapses between the initial symptoms of leprosy and a well-marked case of lepra.

Dr. H. E. Ménage, of New Orleans, said that in the majority of cases of leprosy, the micro-organism was either not demonstrable or had lost its virulence in the trophic lesions. He recalled cases, however, that had apparently originated from late lesions of tubercular leprosy, and he had seen cases develop side by side during the active stage of tubercular leprosy.

Dr. Walter Remsen Brinckerhoff, of Honolulu, said the question of the diffusion of leprosy was a public health problem of great interest.

In Hawaii the disease had been under control for over forty years by means of segregation. In watching the methods by which this had been brought about, he had been struck by the extreme difficulty that had been encountered in persuading lepers to go into segregation. For that reason, he thought it important to emphasize the fact, among people who were liable to contract the disease, that treatment could be carried out in the segregation colonies which, while not necessarily holding out the hope of a cure, would at least afford a great amelioration of symptoms. The popular conception was that when a patient once entered a leprosarium, it was to die without treatment; this caused much prejudice against these institutions. In communities where leprosy was likely to occur, the people should be informed that proper treatment would render them more comfortable, even if it will not cure them. In this way only would it be possible to get control of the cases early in the disease.

Dr. Joseph Grindon, of St. Louis, asked Prof. Campana whether he had said that bacilli were not to be found in the tubercular lesions of leprosy, or whether he referred to the late dystrophic lesions.

Prof. Campana replied that the bacilli were found in the early lesions, but not after the disease had attained its full bloom. The infectious character of the disease gradually diminished and finally disappeared entirely.

Dr. Isadore Dyer, of New Orleans, said it was unfortunate that one had to discuss a paper, which was apparently of so much interest, second-hand, and personally he had not intended to discuss it until Dr. Grindon brought out the point in regard to the

character of the lesions referred to by Prof. Campana, in connection with which there seemed to have been some misunderstanding.

Dr. Dyer said he believed it was the experience of everyone who lived in a leper centre that the bacilli of leprosy became attenuated with the attenuation of the types of the disease. In other words, that the trophic types were evidence of the fact that the disease was more or less effete. An observation of a number of cases in the lazaretto in Havana seemed to show that. They pointed with a large degree of suggestive argument to the fact that, although that institution had existed for many decades, there was not a single instance of infection occurring in the hospital itself. Dr. Thompson of New South Wales had argued that only those cases that showed the deformities of leprosy should be dismissed, because they were no longer active. Those who lived in leper centres knew from experience that the disease spread gradually, and, while it could not be traced from individual to individual, it spread numerically wherever it had been introduced. Personally, he believed in fighting the disease to a finish. In Louisiana they had had since 1894 something like two hundred and forty cases under observation at various times, and on an average there had always been from fifty to sixty cases at the leper home. The method of isolation practiced there had apparently not only reduced the number from year to year, but had reduced it to nearly one quarter what it was when isolation was commenced. Almost every one of the new cases showed the evidences of acute leprosy, meaning by that leprosy of an acute macular type, or showing distinct tubercular evidence of the disease. The cases which were purely trophic in type were evidently ancient cases, but the newer cases have been of the macular type, and suggestive of a recent leprous nerve infection.

Dr. Dyer said he had received some notoriety as having effected some cures in leprosy. The good results they had obtained in Louisiana were largely due to the fact that they had come to regard the treatment of leprosy as practically the same as that of tuberculosis. The patient received plenty of fresh air and sunshine, with two or three baths daily, as warm as could be borne. In addition to this, they had followed the traditional treatment of leprosy, depending mainly on chaulmoogra oil and strychnine, but, in cases where this oil could not be tolerated in large doses, cod liver oil or some other oil was substituted with practically equally good results. Under this general method of treatment, after two or three years, some good results were achieved, and in some sixteen cases evidences of the disease were removed.

Dr. Prince A. Morrow, of New York City, said the views expressed by Prof. Campana were certainly somewhat startling. Personally, he thought it was impossible to say whether the bacilli which escaped from the lesions of advanced tubercular leprosy were dead or alive. There was absolutely no culture method which could be relied upon, nor was there any experimental method. Dr. Morrow said he would not be willing to accept Prof. Campana's statement—in spite of the fact that it seemed very positive and absolute—without a more thorough knowledge of the basis of his statements. It would be a practical impossibility to isolate cases of leprosy only during the early stages of the disease, simply because in a large proportion of cases the disease remained undetected in those stages. It was a matter of general knowledge that leprosy might exist for five, ten, fifteen, twenty, and even thirty years, with positive evidences of the disease on the skin in the shape of macules and certain nerve lesions, and still remain unrecognized by the physician without a very thorough examination. That was the reason why we could not exclude leprosy from this country —because we did not recognize it in its early stage. Even in cases of tubercular leprosy there were certain prodromata or initial symptoms which might entirely escape observation, and the nature of which could not be determined with absolute certainty without a microscopic examination. He thought it would be very difficult for Prof. Campana or any one else to indicate the precise period in the evolution of the disease when these bacilli lost their virulence or activity. As a matter of fact, he thought it would be impossible, and he did not believe that we would be justified in trying to distinguish between these two classes of cases. There were cases on record in which the infection was traced to advanced cases.

So far as the anæsthetic cases were concerned, Dr. Morrow said he had always been incredulous as to their danger from a contagious point of view. He thought it was largely due to a paper which he read before the New York Academy of Medicine that the Board of Health of this city adopted a different method of policy in dealing with these cases. At any rate, after that paper was read, a number of lepers who were isolated on North Brother Island were quietly allowed to escape.

In the anæsthetic cases, the speaker said, the bacilli were imbedded in the nerves or deeper tissues; they were, to a certain extent, encapsulated or isolated, and found no means of egress, and for that reason this type of cases could not be regarded as dangerous sources of infection.

Dr. Morrow said there was another point to which he wished to refer, and that was the need of revolutionizing our idea that leprosy was an incurable disease. He had had at least two cases in this city in which the disease had been absolutely cured without a vestige remaining, and in one of those cases the cure had persisted for over ten years. These particular patients were treated with chaulmoogra oil, strychnine, and electricity. Of course, it was difficult to say how much the actual treatment had to do with the cure in these cases, because it was a well-recognized fact that lepers who removed to a favorable climate usually showed more or less improvement. In the leper colony at Molokai, after various methods of treatment had been tried, the best results were claimed from small doses of chaulmoogra oil and strychnine. Dr. Morrow said he had obtained this information from a personal letter recently received from a gentleman who had charge of the male leper colony at Kalawao.

There was another point to which he wished to refer, and that was the spontaneous limitation of the disease. Certain observations had also been made at Kalawao in order to substantiate Dr. Morrow's view that the infection of leprosy occurred in the nasal and upper laryngeal passages. He had recently received a report of ten cases in which the disease existed for periods ranging from eight to fifteen years, showing absolutely no tendency to get worse. In some of the cases the conditions apparently remained stationary, while in the majority an improvement had been noticed. In three of the cases all evidence of the disease had disappeared, and the speaker said he agreed with Dr. Brinckerhoff that the knowledge should be more generally disseminated that leper patients who went to Molokai did not necessarily go there to die. If people who were afflicted with leprosy knew that, there would be less opposition to this measure of segregation, and patients would come under observation earlier in the course of the disease.

Dr. William T. Corlett, of Cleveland, said that last winter he had had the opportunity, with two colleagues, of visiting the leper hospital at Port-of-Spain in Trinidad. This hospital contained two hundred and sixty inmates, most of them well advanced in the disease, and he was informed by the Sister who had charge of the hospital that not a single instance of infection had occurred among any of the hospital attendants during the entire course of her sojourn there, which was about thirty-five years. In that en-

tire period she had been absent from the hospital less than five years. She pointed out other Sisters who had been there almost as long as she, and in no instance had infection taken place.

Dr. Corlett said he believed it was rare that infection occurred among attendants in a leper hospital, and he thought this brought out a clinical point in favor of what Prof. Campana had said.

Dr. Prince A. Morrow, of New York, said that in order to offset the effect of Dr. Corlett's statement he might mention the fact that the gentleman who had charge of the male leper colony at Kalawao went there directly from the United States and three years after his arrival there he fell a victim to the disease. Dr. Morrow examined him at that time, and found unmistakable evidences of leprosy. Since then characteristic signs of the disease had developed, including deformities of the toes, which were the only remaining evidences of the disease at present. For a number of years he had lost the power of one leg.

Dr. Morrow said he knew of at least three physicians who contracted leprosy in the Sandwich Islands. On the other hand, examples to the contrary were not wanting. He recalled the case of a man who lived with his leper daughter for over thirty years without contracting the disease, although his wife and a second daughter subsequently contracted it. All of these cases were well-marked examples of tubercular leprosy. He also recalled the case of a washerwoman who had washed the clothes of lepers for seventeen years and had been exempt during this period, but who fell a victim to the disease.

Dr. Morrow said he did not think the exemption of hospital attendants or Sisters of Charity was strong evidence of the fact that a disease was not contagious. One might as well say that syphilis was not contagious because it is scarcely ever contracted by hospital attendants or helpers.

Dr. H. Radcliffe-Crocker, of London, said he wished to add a few words in confirmation of what Dr. Morrow had said in regard to prognosis. There were two classes of cases: one, the mild form in which the symptoms might continue for an interminable number of years, and some of these patients got quite well. He recalled the case of a woman, about forty, who contracted leprosy in a very mild form; she was under his observation for eight or nine years. The last time he saw her she was entirely free from the characteristic rings, which were the only symptom she had ever exhibited of the eruption. He also recalled two cases of the

tubercular type, which were both treated by chaulmoogra oil. One of the patients was a native of Peru who was able to take 500 minims of the oil a day and was completely cured. He recalled another case, a woman who had spent many years in India as a matron in a leper asylum; she was brought to him to confirm the fact that she was absolutely free from all symptoms of the disease, as she wished to go to the United States and did not care to run the risk of segregation in a leper colony.

Dr. Crocker asked Dr. Dyer whether he had tried the mercurial injection treatment, of which the speaker had been an advocate. While the treatment did not effect a cure, it produced a great reduction in the amount of infiltration, as well as a general improvement in the patient for long periods of time. In corroboration of this statement, he hoped to exhibit photographs showing the condition of patients before and after this method of treatment and in these cases the improvement was very rapid and obvious.

Leprosy, Dr. Crocker said, was by no means a hopeless disease, and in the mild nerve forms the prognosis was fairly good. At all events, the duration of the disease was so long and the symptoms so trifling that they scarcely incommoded the patient.

Dr. Burnside Foster, of St. Paul, said that his experience with leprosy among the Scandinavians in the North, mostly Norwegians, had led him to recognize the communicability of the disease, but he believed that it was communicated with great difficulty, and that it could only be engrafted upon a peculiar soil. Furthermore, that there were many who could not be inoculated with it.

Dr. Foster said he was glad Dr. Morrow had mentioned the possibility of the spontaneous disappearance of the disease. The Scandinavians knew more about leprosy than most doctors do; they were able to recognize it from its inception, and carefully concealed the evidences of it as long as possible. Many of the cases existed for many years without being detected by the authorities, and he knew of several instances where the symptoms disappeared after the disease had been in existence for fifteen years and longer. In one case where the bacilli had been repeatedly found they finally disappeared. It was a case of tubercular leprosy in which the disease disappeared spontaneously, leaving deformities.

Prof. Campana, in closing the discussion, said that, while he was sorry that any exception had been taken to the views expressed in his paper, he did not wish to have it understood that

he was opposed to isolating cases of leprosy, because it was very difficult to state the exact time when the infective period of the disease disappeared. He simply wished to insist on the scientific accuracy of the observation that the infectious character of the disease disappeared with the full development of the disease, and that in order to prevent the spread of the disease it was necessary to destroy the sources of infection in the patient. Nothing was said against the advisability of protecting the community from the spread of leprosy by proper segregation.

## ON THE PRESENT POSITION OF THE LEPROSY QUESTION

By Jonathan Hutchinson, F.R.S., L.LD., London

Since the publication of my work on *Fish Eating and Leprosy* now nearly two years ago, I have received many communications on the subject from various parts of the world. Almost without exception, these have been to the effect that the hypothesis advocated was eminently applicable to the district with which the writer was acquainted. I will now deal, therefore, only with those which contested my conclusions.

### BASUTO-LAND

Observers in Basuto-land have urged that in that country very little fish is eaten, while leprosy is yet prevalent. This allegation is one with which I have long been acquainted, and it was one of the chief objects of my visit to South Africa in 1901 to investigate it on the spot. Owing, however, to the war, then not concluded, I was unable to get into that territory. Basuto-land is a mountainous inland district and is sometimes called the Switzerland of South Africa. It is inhabited by a hardy race of Bantu descent. No fish is obtained there, and what is eaten is all or nearly all imported. There is no prejudice against salt-fish; on the contrary, the Basutos are exceedingly fond of it and only their poverty prevents its liberal use. Tinned fish in the form of sardines is very eagerly purchased and in considerable quantities; but it is said that the cheaper, and in my opinion

really dangerous, kind known in Cape Colony and the Transvaal as "Sack-fish" does not find its way into "the Switzerland of South Africa." The Basutos are, however, like the rest of the Kaffir tribes, travellers, and great numbers of the younger men go for a time to the mining centres in search of work. At Queenstown I was fortunate enough to meet with one of these Basuto immigrants who was a leper. He had lived long in Cape Town, and he told me that he had eaten much salt-fish and that all his countrymen did so whenever they could get it. If then we allow ourselves to suspect that those who have reported no fish-eating and much leprosy in Basutoland may have unintentionally somewhat exaggerated the prevalence of the disease and minimized the consumption of cured fish whilst neglecting to ascertain the influence of temporary migration, there does not seem to be any great bulk of facts needing to be explained. I am glad to be able to believe with confidence that there is no other place where a case so seemingly strong can be stated, and I regret exceedingly that it has not been possible for me to examine the facts personally on the spot.

### OUTBREAK IN SWITZERLAND

In the autumn of 1896 sensational statements appeared in the European press as to an outbreak of leprosy in European Switzerland. In the middle ages there were many leper-houses scattered over the Swiss cantons, and one of the latest to survive was that at Sion in the Rhone Valley. This had, however, been closed for two or three centuries prior to the recent outbreak, and during this period there had been no suspicion as to the existence of the disease in Swiss territory. It is needless to state that, while more than half of the Swiss population had early embraced Protestantism and renounced the Catholic fasts, several of the smaller and more thinly populated cantons had remained true to the older form of faith. Amongst the latter the town of Sion and the whole district of the valley of the Rhone are included.

Being very sure that a sudden outbreak of leprosy in the Swiss mountains would certainly be brought forward as an argument against the fish hypothesis, I determined to visit the

locality and investigate the facts. Armed with proper credentials I made my way to Sion, and en route, at Lausanne and Geneva, obtained from professional confrères and others as much information as I could. Every one assured me that I should find no consumption of fish, either fresh or cured, in the district concerned. All fish that could be got from the mountain streams was much too valuable to be eaten by the peasants, and the latter were too poor to import the salted article. Even in Sion itself, from resident officials, to whom it was necessary for me to apply in order to obtain access to the patients, the same statements were made to me in the most confident terms. From Sion I went forward to Leuche (a thirty-mile journey) with a puzzled suspicion that now at length I was about to encounter facts which it would be very difficult to explain away. It was in or near Leuche that the lepers had been discovered. On arriving there I called upon the medical adviser of the district to whom I had government introductions. He gave me most courteous assistance and at once arranged to climb with me next morning to the upland village of Sittet where two of the patients lived. On my stating that I supposed that the peasants got no salt fish he at once replied: "Oh, but indeed they do! They keep their fasts on salt fish, and during Lent potatoes and salt fish are their chief food." The landlord of my hotel confirmed this, and added that "stock fish," with which he was well acquainted, was regularly, during the season, on sale at three or four shops in the little village. Yet further confirmation was obtained from the peasants themselves, who said that they always ate salt fish during Lent and on other fast days, excepting during summer, *when it could not be kept good*. Subsequently at Berne, through the kind assistance of Dr. Gamgee, I obtained statistics of the importation of salted fish for the Rhone Valley and found that it was very considerable.

We may then consider it as established that the peasants in the village where the leprosy cases have occurred do consume salt fish rather freely and that their fish is apt to go bad in warm weather.

The introduction of fish into the district is solely in order

to meet the requirements of a Catholic community and would not take place were it not for the fast days.

Thus then it is clear that the recent development of leprosy in Switzerland, so far from confuting the fish hypothesis, gives it valuable support. I may add that it does also, in the strongest manner, confute the suggestion of contagion. There are at present only four cases, but it is not improbable that a few have occurred in the same village during the last fifty years or more, whilst, although not the slightest precautions have been taken, there has been no spreading. Two of the four cases (young persons) are still living with their relatives and the others have been only very recently and very partially isolated. Some very interesting questions respecting Swiss leprosy remain for discussion. Why did the disease cease in Switzerland about the time of the Reformation although some cantons remained Catholic? We do not know enough as to the social history of the time to be able to answer with confidence. It may have been that the greatly diminished demand throughout the country for fast-day fish, made it impossible for the poorer classes and those most remote from the sources of supply, among whom the Catholics would be numbered, to obtain salt-fish at all. Even at the present day well-informed residents are under the impression that the peasants cannot afford it. This I have shown to be a mistake, but it remains highly probable that it has been the development of traffic (roads and railroads) and the increase of wealth which have made it recently accessible and thus given leprosy a fresh start.

There is reason to believe that (as in almost all civilized countries) there have been during the last century numerous instances of exotic lepers coming to reside in Switzerland. In many such cases the malady has not been recognized and the patient has continued until the time of death to reside with relatives. Yet no outbreaks have occurred. Two such cases I myself visited with their medical attendants who were well aware of the nature of the disease, yet, although both the latter were avowed contagionists, in neither instance was the slightest precaution being observed. One of these cases was a severe one, the patient being quite blind, yet, at the

time of my visit to him, he sat in his garden with a group of children about him. The other, a milder one, was an inmate of a general ward at a hospital. I told my friends, the surgeons concerned, that while I applauded their personal courage (for they visited their patients regularly and touched them freely), I could not approve their imprudence in thus exposing themselves and others to a risk which they held to be so terrible.

### LEPROSY IN FINMARKEN

I have reserved to the last an objection to the fish-hypothesis which has recently been put forward by the greatest living authority on leprosy, my much honored friend Dr. Hansen. With that candor which distinguishes his character, Dr. Hansen has recently fully admitted that the suggestion of contagion cannot be made to explain the facts as obtained in Norway. He refuses, however, to accept any food explanation, and he has in a recent communication to *Lepra* brought forward facts which he holds confute it, more especially that one which traces the disease to decomposing fish. The inhabitants of Finmarken are, he tells us, great fish-eaters, yet they suffer far less from leprosy than do their fellow-countrymen and near neighbors on the west coast of Norway. My reply to this is, that Finmarken, which is within the Arctic circle and includes the North Cape itself, is a very cold region. The fish are frozen during two-thirds of the year. The west coast, although so near, has a wholly different climate. It is under the influence of the Gulf Stream and its waters are always comparatively warm. The fish which are caught decompose if kept and do not freeze. The conditions of Finmarken are, I believe, very similar to those of Newfoundland, and in both places leprosy although present, and if contagious likely to spread, does not do so. The explanation is the same in both and, so far from confuting the fish-hypothesis, strongly supports it.

### INCREASE OF LEPROSY IN SOUTH AFRICA

The belief in contagion has received a damaging blow from recent experience in South Africa. In Cape Colony rigid enactments for the segregation of all lepers have been carried

out for many years with cruel and vigorous consistency, while the fish traffic has been left uncontrolled. The result has been a steady and very considerable increase of the disease, while the new cases have occurred not near to any leprosy centres, but scattered over the agricultural districts among those who so far as they knew had never been exposed to risk.

### SUMMARY

Thus I think that the believers in the fish origin of the disease may fairly claim that the evidence, which has accrued since my book was published, has all tended to strengthen the conclusions therein advanced and to discredit those of the contagionists. Although the fish-hypothesis has as yet but few avowed disciples, yet it has, I believe, exercised a widespread and very beneficial influence. Attention has been given to the details of fish-curing, the importance of the supply of good and cheap salt. and the dangers attending the consumption of badly cured fish. It was with the hope of securing these objects, without needless delay, that I took the somewhat exceptional step of bringing the facts before the public as well as before my own profession. I cannot regret that I did so. The question still remains one of circumstantial evidence, and the facts require for their correct appreciation more time and attention than most of our profession are able to give to them. It was absolutely necessary if possible to convince the public.

### RECOVERIES

I may just add that I have had recently some good examples of recovery from leprosy under treatment. My personal conviction is that leprosy will eventually take its place as a form of tuberculosis in which a somewhat specialized bacillus finds its entrance almost solely by the mouth. It will be recognized that it is self-curable, if the supply of the parasite be stopped, under similar measures to those which are found useful in other tuberculous affections.

# TRAITEMENT DU LÉPROME PAR LA PERFORATION ET LA CAUTÉRISATION IGNÉE

PAR LE DR. JOSÉ VIÑETA-BELLASERRA, BARCELONA

*Extrait :*

Les lépreux ont fréquemment des accès fébriles plus ou moins intenses et de plus ou moins longue durée. Ces accès ont déja été signalés par les médecins du moyen âge.

Souvent la fièvre est tellement légère que le malade n'y prête pas attention. Ce sont de petits accès de fièvre passagers fugitifs, intermittents. Plusieurs malades les prennent pour des accès de fièvre paludéenne. D'autres aussi attribuent leur fièvre à un refroidissement. Ces accès apparaissent généralement le soir ou l'après-midi.

Dans d'autres cas de grands frissons agitent le corps et l'on constate une forte élévation de la température. Ces frissons, cette fièvre, sont parfois tellement intenses, qu'ils rappellent le frisson de la pneumonie aigue, de la variole, etc., et que le sujet se croit atteint d'une fluxion de poitrine, due à un refroidissement, ou d'une affection quelconque à début fébrile intense.

Je ne décrirai pas ici les lépromes, que vous connaissez très bien; je dirai seulement qu'il se présente souvent une fièvre subite et intense, accompagnée de troubles digestifs infectieux qui compromettent la vie du malade, coïncident aussi avec l'infiltration et la suppuration des tubercules lépreux. Quelquefois ils coïncident avec l'invasion de l'éruption bulleuse (pemphigus leprosus) des poussée lymphangitiques et des œdèmes masquant le volume ordinaire de la région attaquée.

Quand je constate tous ces symptômes, je prends la pointe fine du termo- ou galvano-cautère, et je procède de suite à la perforation et la cautérisation igneé de tous les tissus envahis par le germe lépreux. Aussitôt cette opération exécutée, on

voit sortir une quantité assez considerable de pus. Une fois dégagée de cette pourriture des régions atteintes, la lymphangite disparaît de suite, ainsi que les symptômes généraux: fièvre, troubles intestinaux, nerveux, etc.

Concernant l'état général des malades, je soumets d'abord ceux-ci à une bonne nourriture, à la médication tonique, surtout au sulfate de quinine, à l'huile de Chaulmoogra à hautes doses, et pour la désinfection du tube digestif, au benzonaphtol.

Ayant obtenu de très bons résultats, j'ai essayé le même procédé pour atrophier les masses tuberculeuses, surtout dans toutes les régions du visage, et j'ai également obtenu de brillants succès.

## LE TRAITEMENT DU LUPUS VULGAIRE PAR LA TUBERCULINE DE BÉRANECK

Par le Dr. A. Lassueur, Lausanne

La découverte de la radiothérapie et de la photothérapie, méthodes qui sont venues enrichir, presque simultanément, la thérapeutique du lupus vulgaire, a fait oublier les essais tentés avec la tuberculine, essais qui avaient été cependant couronnés de quelques succès incontestables.

Aujourd'hui, l'enthousiasme qu'avait suscité les premiers résultats obtenus par les rayons X et les rayons ultra-violets, a certainement diminué. Une expérimentation suffisamment longue, est venue démontrer qu'il y a des cas de lupus, qui ne sont que peu ou pas influencés par les rayons X, et qu'il en est d'autres, qui, de par leur étendue et leur siège surtout, sont non pas impossibles, mais bien difficiles à traiter par la méthode Finsen.

Les anciennes méthodes de traitement du lupus qui cependant avaient fait leur preuve, mais que le dermatologue s'était trop empressé d'abandonner, reprennent aujourd'hui—lentement il est vrai—la place qui leur est due dans la thérapeutique du lupus tuberculeux. La diversité des cas de lupus est telle, du reste, que l'on ne peut songer à voir un seul et unique traitement employé, dans tous les cas avec le même succès. Les

agents physiques, employés en thérapeutique, ne varient-ils pas dans leurs effets, suivant les individus, tout autant que les agents chimiques?

La radiothérapie et la photothérapie dont les indications vont en se précisant toujours davantage, ne doivent pas faire oublier, nous le répétons, les anciennes méthodes qui ont le grand avantage d'être plus simples et à la portée de chacun. Elles laissent, en tout cas, dans la thérapeutique du lupus vulgaire une place pour de nouvelles recherches:

Ceci dit pour justifier les essais que nous nous sommes permis de tenter dans notre clientèle privée, sur quelques malades atteintes de lupus, avec une nouvelle tuberculine, celle du Pr Béraneck, de Neuchâtel.

C'est la lecture du remarquable travail de M'Call Anderson, sur lequel nous reviendrons tout à l'heure, et les résultats encourageants obtenus par le traitement à la tuberculine dans les tuberculoses chirurgicales qui nous ont encouragé à reprendre ce traitement dans le lupus vulgaire. Nous avons choisi la tuberculine de Béraneck, de préférence aux autres, parce que son emploi est facile, exempt de danger, et que théoriquement elle nous paraissait supérieure aux autres. Préparée dans notre pays, nous pouvions l'obtenir aussi plus facilement qu'aucune autre.

De toutes les tuberculines connues jusqu'à ce jour, aucune n'a encore tenu toutes les belles promesses de ses parrains et réalisé toutes les espérances qu'on attendait d'elle dans le traitement de la tuberculose pulmonaire. Cela est vrai. Mais dans des tuberculoses plus bénignes, plus circonscrites (chirurgicales par exemple) évoluant sur un sujet en santé apparente parfaite, exempt tout au moins de lésions pulmonaires, le traitement à la tuberculine a donné des résultats *encourageants*. Cela est incontestable. Au patient labeur du savant de laboratoire, qui cherche dans les divers modes de préparation de la tuberculine, celui qui, théoriquement, lui paraît le plus exact, doit donc s'unir l'expérimentation du clinicien et ses observations sur le malade. Trop de médecins découragés par la faillite d'autres sérums ou ayant encore présent à l'esprit les désastres qui suivirent les premiers essais pratiqués avec la tuberculine de Koch, se refusent à employer les nouvelles

tuberculines. Ils cachent volontiers leur parti-pris sous des apparences humanitaires, en répétant bien haut que les malades ne sont pas des cobayes!

D'autres médecins, attendent que les chimistes aient extrait et dosé les substances actives de la tuberculine, ne voulant pas employer un remède dont ils ignorent la composition exacte.

Cette façon de raisonner ne nous paraît pas très juste, et nous dissipons à l'avance les craintes de ces confrères timorés, en leur disant que dès l'instant où le traitement à la tuberculine cesse d'être dangereux, nos malades cessent d'être des cobayes, et que si nous voulions attendre de connaître la nature ou la composition exacte de tous les agents thérapeutiques pour les employer, nos malades perdraient le bénéfice de méthodes thérapeutiques pourtant singulièrement efficaces. Le traitement de la leucémie par les rayons X en est un exemple entre mille.

Le médecin ignore la cause première de la leucémie et la nature des rayons X. Cela ne l'empêche pas de traiter la leucémie par les rayons X, car il lui suffit de comparer ce qui se passe avant et après le traitement, pour croire à l'efficacité de la méthode, quand bien même il ignore totalement ce qui se passe pendant le traitement!

Aucun travail n'a encore paru sur le traitement du lupus vulgaris par la tuberculine de Béraneck. En feuilletant la littérature dermatologique de ces cinq dernières années, nous avons trouvé la relation de quelques cas de lupus traités par la tuberculine de Koch, qu'il nous paraît intéressant de résumer.

En 1905, M'Call Anderson[1] a publié une série de cas de lupus guéris par les injections de tuberculine. Les photographies qui accompagnent ce travail sont des plus convaincantes et ne laissent subsister aucun doute sur l'efficacité de ce traitement, attendu que le lupus ne guérit pas spontanément, que les malades n'ont été soumis à aucune autre médication et qu'il ne saurait s'agir d'erreur de diagnostic.

[1] "A Plea for the More General Use of Tuberculin by the Profession," by T. M'Call Anderson, M.D. *The British Journal of Dermatology*, 1905.

Il y a cependant eu un travail antérieur publié par B. Cranston Low paru dans le n° 1905 du *Scottish Medical and Surgical Journal*.

Darier [1] a présenté en 1905, à la Société de Dermatologie de Paris, un jeune homme de 22 ans, atteint d'un lupus vulgaire de la face et du cou, y compris le nez et les oreilles, guéri par des injections de tuberculine. Les progrès de la guérison avaient été extrêmement rapides.

R. Crocker et G. Pernet [2] ont obtenu également des résultats très satisfaisants avec la tuberculine de Koch dans les formes ulcéreuses et chez les enfants surtout. Ils recommandent le traitement à la tuberculine, comme adjuvant des méthodes opératoires.

Malcolm Morris [3], après une expérimentation personnelle relativement longue, conclut à l'utilité des injections de tuberculine, qui si elles ne guérissent pas toujours, rendent souvent un traitement ultérieur plus facile.

Avant de résumer nos observations personnelles, nous décrirons en quelques mots la tuberculine de Béraneck et la technique que nous avons adoptée.

*La tuberculine de Béraneck* qui diffère essentiellement de celle de Koch, est un mélange de toxines extra-cellulaires, élaborées dans un bouillon de cultures de composition spéciale et de toxines extra-cellulaires extraites des corps bacillaires par de l'acide orthophosphorique à 1%. Cette tuberculine n'a pas que des propriétés immunisantes, elle exerce aussi sur le bacille de Koch soit une action bactéricide lorsqu'on l'emploie en solution concentrée; soit une simple action atténuatrice lorsqu'on l'emploie en solution diluée.[4]

La tuberculine Béraneck est livrée dans le commerce en 15 solutions principales désignées par les symboles $\frac{A}{128}$; $\frac{A}{64}$; $\frac{A}{32}$; $\frac{A}{16}$; $\frac{A}{8}$; $\frac{A}{4}$; $\frac{A}{4}$; $\frac{A}{2}$; A; B; C; D; E; F; G; H. La solution

[1] Darier "Lupus tuberculeux de la face datant de cinq ans guéri en trois mois par des injections de tuberculine." *Annales de Dermat.*, 1905, p. 249.

[2] R. Crocker and G. Pernet. "The T. R. Tuberculine Treatment of Lupus Vulgaris at University College Hospital." *British Medical Journal*, 1902.

[3] Malcolm Morris. "Die Behandlung der Lupus vulgaris während der letzten fünf-und-zwanzig Jahre." *V. Internation. Dermatol. Congress, Berlin*, 1904.

[4] Pour le mode de préparation de la tuberculine Béraneck, consulter: *Revue Médicale de la Suisse Romande*, 20 octobre, 1905. "Une nouvelle tuberculine," par Ed. Béraneck.

la plus faible est $\frac{A}{128}$; la plus forte est H. Chacune de ces solutions, en commançent par $\frac{A}{128}$ est deux fois plus forte que la précédente; $\frac{A}{64}$ contient donc deux fois plus de tuberculine que $\frac{A}{128}$; $\frac{A}{32}$ en contient deux fois plus que $\frac{A}{64}$ et ainsi de suite. La tuberculine est diluée dans de la solution physiologique. En supposant que H représente la tuberculine Béraneck pure, le Prof. Dr. Sahli a établi l'échelle suivante:

| | |
|---|---|
| H = TBK. (Tuberculine Béraneck pure) | |
| G = TKB/2 | $\frac{A}{2}$ = TBK/256 |
| F = TBK/4 | $\frac{A}{4}$ = TBK/512 |
| E = TBK/8 | $\frac{A}{8}$ = TBK/1024 |
| D = TBK/16 | $\frac{A}{16}$ = TBK/2048 |
| C = TBK/32 | $\frac{A}{32}$ = TBK/4096 |
| B = TBK/64 | $\frac{A}{64}$ = TBK/8192 |
| A = TBK/128 | $\frac{A}{128}$ = TBK/16384, etc. |

Chaque flaçon contient 10 cc. d'une de ces solutions. Les flaçons doivent être conservés au frais et à l'obscurité. En prélevant dans les flaçons les doses à injecter, il faut opérer aussi aseptiquement que possible afin de ne souiller ni le bouchon, ni le liquide. La tuberculine doit rester limpide. Une fois contaminée, elle devient trouble et n'est alors plus ultilisable. La seringue sera stérilisée de préférence par cuisson dans l'eau, sans adjonction d'antiseptiques ou d'alcalins. Il y a avantage à se servir d'une aiguille en platine, qu'il suffit de flamber avant chaque injection.

Nous renvoyons le lecteur au travail du Pr. Dr. Sahli, [1] pour ce qui concerne le mode d'emploi de la tuberculine Béraneck dans toutes les formes de tuberculoses internes, et au travail du Dr. de Coulon,[2] pour ce qui concerne les tuberculoses chirurgicales.

*Modes d'emploi dans le lupus vulgaris:* Sur les conseils du Pr. Béraneck nous avons fait d'emblée des injections intra-

[1] Prof. Dr. Sahli. "Über Tuberkulin behandlung."

[2] Dr. de Coulon in *Revue Médicale de la Suisse Romande*, n° 6, juin, 1907.

focales, c'est-à-dire, que nous avons injecté la tuberculine en plein tissu lupique. L'auscultation nous ayant révélé chez nos malades, l'absence de lésions pulmonaires, nous avons commencé par la solution $\frac{A}{8}$ que nous avons injecté par 1–10 de cc. trois fois par semaine, en augmentant la quantité de tuberculine de $\frac{1}{10}$ de cc. à chaque piqûre. Parvenu à $\frac{10}{10}$ de cc. de la solution $\frac{A}{8}$ nous passons à la solution $\frac{A}{4}$ que nous injections de la même façon, puis aux solutions $\frac{A}{2}$; A, B, C, D, etc. Comme on le verra dans les observations qui suivent, il n'est pas nécessaire d'injecter toute la gamme des solutions de tuberculine.

Les injections sont indolores. Elles ne produisent pas, en règle générale, de réaction locale inflammatoire. Nous avons observé quelquefois une induration au siège de l'injection, lors de l'emploi des solutions fortes D, E, par exemple, induration qui persiste dix à huit jours, puis disparaît sans laisser de trace.

Nous n'avons jamais observé d'élévation de la température pendant l'emploi des solutions $\frac{A}{8}$ à A. Pendant l'emploi de la solution B une malade a présenté le soir et le lendemain de la piqûre, une assez forte réaction fébrile (voir obs. I.), réaction passagère, qui ne s'est pas reproduite avec les injections de solutions plus concentrées C, D, et E.

Nous avons observé quelquefois également, des réactions fébriles pendant l'emploi des solutions fortes (B, C, D, p. ex.) lorsque le traitement avait été momentanément interrompu. Exemple: une malade en est à $\frac{6}{10}$ de la solution B. Au lieu de revenir deux ou trois jours après, recevoir $\frac{7}{10}$, elle ne revient que quinze jours après. On reprend le traitement avec $\frac{7}{10}$ de la solution B. Le soir même et le lendemain réaction locale et fièvre. Le surlendemain injection de $\frac{8}{10}$, pas de réaction thermique. Les injections se font dès lors régulièrement, et l'on n'observe plus d'élévation de température.

Nous n'avons jamais observé d'autres phénomènes réactionnels. Pour nos trois malades, le traitement a été ambulatoire du commencement à la fin.

Observation I.—Mme D., 40 ans. Lupus vulgaris envahis-

sant toute la joue et l'oreille gauche, ayant débuté il y a sept ans au lobule de l'oreille. Il y a six ans, excision du lobule de l'oreille, opération rapidement suivie de récidive, dans la cicatrice, le lupus envahit peu à peu le pavillon de l'oreille puis la joue. L'état général de la malade est excellent.

Début du traitement par la tuberculine de Béraneck, le 22 juin 1906. Solution $\frac{A}{8}$; $\frac{A}{4}$; $\frac{A}{2}$ et A, une injection tous les deux jours, guérison apparente extraordinairement rapide, puis solution B, une injection deux fois par semaine.

Le 19 décembre la malade est blanchie.

En février 1907, cinq petits tubercules réapparaissent disséminés sur la belle cicatrice du lupus. On reprend les injections d'emblée avec la tuberculine B. Après quatre injections (soit $\frac{1}{10}$, $\frac{2}{10}$, $\frac{3}{10}$, $\frac{4}{10}$,), guérison (27 férier 1907). Le 19 mars, deuxiéme récidive; sept à huit petits tubercules, dont deux sont manifestement ulcérés, ont réapparu. Nous reprenons les injections avec la solution B, mais avec l'intention bien arrêtée cette fois, de poursuivre le traitement. La quatrième, cinquième et dixième injection de la solution B, sont suivies d'élévations de la température (38°, 38.5°). Les tubercules ayant disparu, et l'état général étant excellent, nous continuons les injections en employant successivement les solutions C, D, E, mais en ne faisant que deux injections par semaine. La malade est guérie depuis le mois d'avril. (V. les deux planches I et II, avant et après le traitement.)

Observation II.—Mlle. L., 25 ans. Lupus exedens du lobe de l'oreille gauche, et du sillon retro-auriculaire, ayant apparu il y a trois ans.

Traitement antérieur à la tuberculine pour ainsi dire nul (pommades!) Début du traitement à la tuberculine de Béraneck le 20 juillet 1906.

Solutions: $\frac{A}{8}$; $\frac{A}{4}$; $\frac{A}{2}$; A. Le 20 octobre, la malade est blanchie. A partir de cette date au 1er janvier 1907 nous faisons encore une à deux fois par semaine, une série d'injections avec la solution B et C.

La malade est guérie depuis le mois d'octobre 1906.

Observation III.—Madame M. 40 ans. Coxalgie à l'âge de 16 ans. Actuellement ankylosée de la hanche droite.

Lupus vulgaire de la face (nez et joues), apparu il y a vingt ans au moins. Traitement antérieur aussi multiples qu'irréguliers.

Du 16 mai 1905 au 1er juillet 1906, nous avons traité la malade par la radiothérapie. Traitement extrémement long vu la grande surface de peau malade et les récidives survenues pendant ce traitement, mais somme toute couronné d'un assez bon résultat. En juillet 1906, nouvelle éruption de tubercules sur les deux pommettes et le nez. La malade ayant eu déjà un nombre considérable de séances de rayon X et la peau des pommettes ayant été le siège de radiodermites provoquées successives, nous nous décidons à traiter la malade par des injections de tuberculine Béraneck. Après une série d'injections avec la solution A, soit trois semaines après le début du traitement, tous les tubercules avaient disparus. Nous avons fait encore une deuxieme série d'injections avec la solution B, une injection deux fois par semaine; la guérison qui date d'octobre 1906, s'est maintenue jusqu'à ce jour. La tuberculine a été d'un précieux secours dans ce cas, car nous désespérions d'obtenir un résultat *definitif* avec les rayons X. (V. les deux planches III et IV, avant et après le traitement.)

## CONCLUSION

Le nombre de cas que nous avons traité par la tuberculine Béraneck est insuffisant pour nous permettre d'en déduire des conclusions précises, et de prôner la spécificité de ce nouveau traitement. Il est cependant suffisant pour nous permettre d'en recommander l'emploi, étant donné les résultats que nous avons obtenus. A cet égard, la matérialité des faits qui font l'objet de ce travail est indéniable.

PLANCHE I—Illustration pour l' article du Dr. Lassueur.

PLANCHE II—Illustration pour l' article du Dr. Lassueur.

PLANCHE III—Illustration pour l' article du Dr. Lassueur.

PLANCHE IV—Illustration pour l' article du Dr. Lassueur.

# LA TUBERCULOSE DE LA PEAU DANS LA VILLE DE MEXICO

PAR M. LE PROFESSEUR JESUS GONZALEZ URUEÑA, MEXICO

Les observations pratiquées pendant un peu plus de deux ans dans la section des maladies cutanées et syphilitiques du "Consultorio Central" de la Capitale du Mexique ont servi de base à la présente communication.

Parmi 5268 malades de la peau qui ont été soignés du 7 février 1905 au 20 avril 1907, il y a eu 46 cas de tuberculose cutanée, répartis de la manière suivante:

| | |
|---|---|
| Gommes tuberculeuses | 19 |
| Lupus érythémateux | 11 |
| Lupus tuberculeux plan | 7 |
| Ulcérations tuberculeuses | 3 |
| Lupus pernio | 2 |
| Tuberculose verruqueuse | 2 |
| Adénite tuberculeuse | 2 |

Ceci donne comme résultat 8.73 pour mille de tuberculeux cutanés sur le nombre total des maladies de la peau observées pendant ce temps.

### GOMMES TUBERCULEUSES

Cette forme est la plus fréquente et représente 3.6 pour mille de l'ensemble des patients notés. Le siège de prédilection fut le cou, où l'on observa 14 cas. Tous les malades étaient des adultes, à l'exception de quatre, âgés de 3, 5, 6 et 7 ans respectivement. Parmi les individus atteints de cette maladie, 13 appartenaient au sexe masculin et 6 au sexe féminin. Les occupations de ces individus étant très variées, ne prêtent à aucune considération générale.

On ne fait pas mention dans les registres s'il s'agit de la variété gommeuse dermique ou bien de la variété hypodermique,

ce que, d'ailleurs, il aurait été impossible de préciser dans plusieurs cas, si l'on songe à la période avancée d'évolution où se trouvaient les patients.

### LUPUS ÉRYTHÉMATEUX

A ce type morbide correspondent 11 cas, parmi les 46 de lésions tuberculeuses observées, ce qui donne 2 pour mille sur la totalité des malades.

Conformément aux observations recueillies dans différents pays, le siège de prédilection de la maladie était le visage, puisque c'est là qu'elle apparut chez les 11 patients enregistrés. Les femmes fournirent un plus grand contingent que les hommes (9 contre 2). Tous les malades étaient adultes, leurs âges étant compris entre 19 et 43 ans. Le lupus érythémateux est rare avant l'âge de 17 ans.

Parmi les hommes et les femmes atteints, plusieurs exerçaient un métier prédisposant à la congestion faciale: on y trouvait des repasseuses, des cuisinières, des couturières, des relieurs, etc. L'influence de cette perturbation circulatoire locale sur le développement de la dermatose est bien connue.

Aucun des cas observés ne dépassa les formes ordinaires de cette variété de lupus, et, d'après le souvenir personnel que nous en gardons, ils appartenaient, pour la plupart, à celui qu'on appelle fixe, et quelques uns à l'érythème centrifuge de Brocq, où l'on a toujours remarqué le trépied symptõmatique caractéristique: phénomènes vasculo-conjonctifs, épithéliaux et de régression consécutive.

Des recherches n'ont malheureusement pas été faites parmi les sujets qui figurent dans notre statistique, dans le but d'apporter quelque lumière sur la nature de ce lupus. Nous dirons seulement que, parmi les cas que nous sont personnels, nous avons trouvé, à l'instar de Bœck, la tuberculose chez les proches parents de l'individu atteint du lupus érythémateux.

Il est très important de faire remarquer qu'à Mexico, ville qui jouit d'un climat d'altitude (2262 mètres au-dessus de la mer), et qui possède un ciel presque toujours bleu, un soleil brillant et une population peu dense, le lupus érythémateux, tuberculose certainement atténuée si même c'est une tuberculose est beaucoup plus fréquent que le lupus vulgaire, dont

la virulence bacillaire est notoire. Il n'est pas à notre connaissance de statistique comparée de la fréquence relative des deux formes de lupus dans aucun pays du monde; mais il suffit d'avoir visité l'Hôpital Saint-Louis à Paris et d'avoir assisté aux consultations dermatologiques de cette métropole, pour être à même d'apprécier l'énorme disproportion qui existe à Paris entre la fréquence du lupus vulgaire et celle du lupus érythémateux; la quantité d'individus atteints du premier est surprenante, tandis que les cas du second sont rares. La densité de la population parisienne, le peu d'élévation de la ville qui se trouve presque au niveau de la mer, ses journées si souvent nuageuses et si courtes pendant l'hiver, tout cela n'exerce-t-il pas quelque influence?

Ce renseignement au sujet de la plus grande fréquence du lupus érythémateux à Mexico est d'autant plus important, que l'on affirme que, de même que pour le lupus vulgaire, sa fréquence diminue à mesure que l'on approche de l'Equateur, et que, par contre, les pays septentrionaux où la température descend facilement au-dessous de 15 degrés et où l'air est constamment saturé d'humidité, sont plus fortement atteints.

### LUPUS VULGAIRE

Nous avons vu 7 cas de ce type, soit 1.33 pour mille des cas dermatologiques observés.

La lésion siégeait au visage dans 2 cas; dans 1 au poignet; dans 1 sur la cuisse, et dans 3 disséminés sur le corps.

Comme d'habitude, le plus grand nombre de victimes fut fourni par les femmes (4 contre 3 hommes).

Les registres accusent pour ce qui concerne l'âge, des variations entre 10 et 56 ans, et il faut remarquer qu'il n'y a eu que deux individus dont l'âge ait dépassé 38 ans, ce qui confirme l'opinion sur l'apparition de la maladie pendant la jeunesse.

Outre le peu de fréquence relative de cette classe de lupus par comparaison avec le lupus érythémateux, il est à remarquer que les formes ulcéreuses, rongeuses, voraces, du lupus vulgaire sont inconnues parmi les malades que nous citons. Les 7 cas observés appartiennent tous au lupus plan. Dans

le rapport intitulé "La Lutte contre le Lupus vulgaire," présenté par Finsen à la Conférence Internationale contre la tuberculose, qui se réunit à Berlin en 1902, il est noté qu'il y avait au Danemark de 1.200 à 1.300 individus atteints du lupus, c'est-à-dire, à peu près 0.6 pour mille de la population totale. En établissant, pour la ville de Mexico, une proportion analogue avec les renseignements que nous possédons, et en l'étendant à tous les habitants du District fédéral qui fournissent le contingent de la consultation dermatologique, l'on obtient un chiffre de beaucoup inférieur à celui qui a été signalé par le célèbre médecin Danois, puisqu'il s'élève, approximativement, à 0.1 pour mille du nombre des habitants. Nous ignorons si dans les autres pays on a établi une statistique proportionnelle semblable pour le lupus vulgaire.

### ULCÉRATIONS TUBERCULEUSES

Nous n'avons que 3 observations se rapportant à cette variété de tuberculose cutanée, laquelle apparut deux fois sur le visage et une fois sur le cou, revêtant, chez un des individus atteints sur la première région, la forme serpigineuse. Cela nous donne à peine 0.56 pour mille sur le total des malades, ce qui confirme l'opinion acceptée que les ulcérations tuberculeuses de la peau sont des lésions très peu communes. Vallas, dans sa thèse, ne parvint à réunir que 35 observations. Quoique rare, l'existence de cette lésion comme manifestation première de la bacillose est hors de doute; cependant, le plus souvent elle est regardée comme une complication des tuberculoses des viscères, de la tuberculose pulmonaire en particulier, surtout à la période cachectique.

Il nous est impossible de fixer ce point d'une façon certaine chez nos malades, faute de renseignements explicites; mais il est à supposer qu'ils ne présentaient pas de symptômes marqués d'un autre mal, les registres ne portant aucune indication à ce sujet.

### LUPUS PERNIO

Cette dermatose étrange et singulière fut observée aux oreilles chez deux hommes âgés de 36 et 32 ans respectivement.

### TUBERCULOSE VERRUQUEUSE

Deux individus furent atteints de cette autre variété de lupus, caractérisée par son apparence morphologique verruqueuse, papillomateuse; mais dont la structure histologique est identique à celle des autres lésions lupiques et qui reconnaissent la même étiologie et pathogénie: l'inoculation du bacille de Koch.

La maladie ne se localisa point, chez les deux patients, sur le dos de la main ni du poignet, sièges considérés comme classiques; chez l'un d'eux, elle apparut à l'aine, et sur le cou chez l'autre. L'un des malades était manœuvre, et l'autre maçon, métiers qui ne prédisposent pas, par eux-mêmes, à la tuberculose verruqueuse, celle-ci étant l'apanage d'individus qui sont exposés au contact des tuberculeux ou de leurs expectorations.

### ADÉNITE TUBERCULEUSE

Nous n'avons rien de particulier à dire sur cette lésion qui dépasse presque le domaine dermatologique, et qui, depuis longtemps, est bien connue et étudiée. Dans les deux cas observés, elle apparut sur le cou de deux jeunes gens, l'un appartenant au sexe masculin et l'autre au sexe féminin, âgés de 21 et 22 ans respectivement.

En résumé, il y a deux points dignes de remarque dans tout ce qui précède: le premier, ce sont, appuyés sur de nombreux chiffres, les particularités que présentent, dans la ville de Mexico, des affections aussi importantes que les tuberculoses de la peau; le second, d'un plus grand intérêt peut-être, vu son importance pratique, se rapporte aux données qui peuvent être mises à profit pour prévenir le développement d'un des plus grands fléaux qui affligent l'humanité: la tuberculose. Ce dernier point est digne de toute attention, si l'on remarque que dans les campagnes entreprises dans presque tous les pays contre cette maladie, l'on ne tient pas compte, pour sa prophylaxie, du facteur cutané. Si nous voulons que notre travail au profit d'un idéal aussi grandiose soit complet, il faudra agir, à l'avenir, de la même façon que pour la tuberculose pulmonaire, car, si cette dernière maladie est plus

fréquente et plus virulente que les tuberculoses cutanées, elle est, par contre, mieux connue du public, qui n'a pas même été averti des dangers que peut présenter l'infection tuberculeuse par la peau.

Notre plus grand souhait est que le VI^e^. Congrès de Dermatologie veuille bien recommander ce point à la considération des Ligues Internationales Anti-tuberculeuses.

## CONTRIBUTION ON THE NATURE AND TREATMENT OF LUPUS ERYTHEMATODES

By Prof. Robert Campana and Dr. G. Lanzi, of Rome

Dr. Lanzi, a young student of mine in the Clinic, has advanced an etiological theory for lupus erythematodes. I had taught that in lupus erythematodes conditions of different predispositions, due to chronic infections, may occur together and constitute a great part of the cause of the disease.

With this opinion, based upon numerous clinical observations, I now believe myself justified in affirming a useful therapeutic principle, which, if it has not the extensive application of the above-mentioned etiological idea, has certainly the merit of practicability and considerable foundation in experience.

To enable those who do not occupy themselves with this special subject to appreciate the importance of the matter, I will recall to them, or will inform them of, a few well-known and undisputed facts concerning lupus erythematodes. They are:

1. That lupus erythematodes often becomes an incurable disease under the treatment at present generally used.

2. That there are cases of lupus erythematodes in which tuberculin acts in the same way as it does in true lupus.

3. That there are some cases not cured under the most active surgical treatment but afterwards cured with surprising ease by the use of mercurial ointment, recommended by Hebra as most efficacious, and yet in many instances not proving so in practice.

So much premised, it will be understood that therapeutical

action, in such cases, must be guided by an analysis of the conditions above alluded to, in order to distinguish the special peculiarities forming the basis of the disease in each case. To begin with the injection of tuberculin and to get no local or general reaction certainly would assign to the case a basis quite other than the tuberculous predisposition accepted by many, but not admitted by all, in lupus erythematodes.

To begin with local and general treatment with mercury and have no apparent improvement therefrom certainly would not predispose one to continue this method of treatment. If, however, without these precautions we proceeded by an inverse method, or were guided by the single case, we might have very bad results.

Where mercury has failed to produce a beneficial result and tuberculin has given one, local surgical treatment is possible. Where the contrary happens and the physician in charge of the case has not attempted precautionary tests, local treatment is injurious, disastrous.

I know of more than one case which had been treated for a long time by curettage and caustics without result; but when I suspended these methods and applied mercurial ointment a cure followed.

As also in cases in which the phenomenon was of tuberculous nature, the caustic has arrested the process, and often prevented any fresh return.

My conclusion, then, is this: that we may go wrong with these old means and methods if we are guided only by the idea that mercury as well as curettage has proved beneficial in the treatment of lupus, without discriminating when and why. On the other hand, distinguishing properly, according to the basis of the etiological predisposition, we can proceed to operate or to apply mercury with evident and precise reasons, differing for each case.

A third remedy has been recently mentioned by many English and American specialists (Fox, Jackson and Lustgarten)—namely, small continued doses of sulphate of quinine. This would lead one to suppose that malaria or conditions resulting from malaria might in some cases be the predisposing cause of the disease.

The introduction of this new predisposing cause does not refute the theory we advance, but simply advises that this other variety be kept in mind, though certainly not of as frequent occurrence, numerically, as the other two.

*Discussion*

DR. JOSEPH GRINDON, of St. Louis, said that in the paper read by Prof. Campana and Dr. Lanzi two classes of cases were mentioned, one in which the tuberculin reaction was obtained, and the other in which it was not obtained, and he asked in what proportion of cases in which the tuberculin was given the reaction followed.

PROF. CAMPANA replied that the reaction was obtained in from seventy-five to ninety per cent. of the cases.

DR. JAY F. SCHAMBERG, of Philadelphia, said he was interested in the use of tuberculin in lupus erythematosus, particularly as he had recently used it in one case on purely experimental grounds. The patient was a colored woman with an extensive lupus erythematosus of twelve years' standing, with considerable loss of pigment over the patch. She had received six injections of tuberculin T. R., in doses ranging from 1:1800 to 1:1000 of a milligram. On at least one occasion following the injection there was a distinct febrile reaction, with sweating and malaise. The exact temperature elevation was not ascertained. A local reaction in the diseased area also occurred. Prior to the institution of the tuberculin treatment, the parts were distinctly whitish, while now they have taken on a decided redness, and the small islets of pigmentation seem to be increasing in size.

DR. MILTON B. HARTZELL, of Philadelphia, confessed to a certain degree of surprise at the large proportion of cases of lupus erythematosus in which Prof. Campana was able to obtain a reaction after the injection of tuberculin. Certainly this was not in accord with the experience of a vast number of dermatologists. There were a certain number of cases of lupus erythematosus in which it was difficult to make the differential diagnosis between that affection and lupus vulgaris, and it was quite possible that a large proportion of the cases in which the reaction was obtained were in fact lupus vulgaris rather than lupus erythematosus.

As to the results of treatment of lupus erythematosus, every one was well aware of the fact that this was a very capricious disease,

and that in the early stages spontaneous involution of the patches might occur no matter what the treatment had been. It was therefore difficult to judge the exact value of this or that remedy. In regard to the malarial element which was referred to by the authors of the paper, Dr. Hartzell said he did not think the conclusion drawn regarding it was justified. We knew that quinine had other effects than its destructive action on the plasmodium malariæ, and whatever good effects quinine exerted in this disease were certainly not due to its action on the plasmodium, but on the circulatory system itself. The speaker said he had tried quinine very extensively in these cases, and while he had seen improvement follow its use, he had never seen it effect a cure.

Dr. Stopford Taylor, of Liverpool, said the remedy in the treatment of lupus erythematosus which had proved most successful in his hands was pyrogallic acid. In the common or stationary types of the disease he used a ten per cent. ointment of pyrogallic acid in the same way as he used it in lupus vulgaris. In one case of acute lupus erythematosus supervening on a chronic condition, the disease had been brought to a successful issue with two per cent. of the acid, combined with Lassar's paste as a base. We knew that pyrogallic acid became oxidized on exposure to the air, and it was probable that further oxidation took place when it was mixed with the zinc oxide in the paste, thus converting the caustic action of the acid into a sedative (pyraloxin); and further, that it also de-oxidized the inflamed tissues to which it was applied.

Dr. Samuel Sherwell, of Brooklyn, said that in cases of lupus erythematosus where the mucous membranes were not involved he had almost invariably obtained excellent results by the use of the curette, followed by the application of the acid nitrate of mercury.

Dr. Herman Lawrence, of Melbourne, Australia, asked whether the reaction in the twenty per cent. of cases of lupus erythematosus after the injection of tuberculin was really definite, or whether the patients simply complained of certain symptoms. The speaker said he would like to refer to a very successful and effective method of treatment of chronic lupus erythematosus which he reported some time ago in the *British Medical Journal.* The treatment consisted of scarification, followed by rubbing in iodoform, and then the application of a waxed indiarubber pad at moderate pressure, which was kept up for twenty-four or forty-eight hours.

# NOUVELLES RECHERCHES SUR L'ECZÉMA PAPULO-VÉSICULEUX

PAR LE DOCTEUR L. BROCQ ET LE DOCTEUR G. AYRIGNAC, PARIS

*Résumé:*

Nous réservons le nom d'eczéma papulo-vésiculeux à une forme morbide caractérisée au point de vue objectif et comme lésion élémentaire initiale par une papulo-vésicule petite, mais des plus nettes aux endroits où elle se forme sur la peau saine. Elle est composée: (*a*) d'une base rosée arrondie, legèrement surélevée, donnant au frôlement du doigt la sensation d'une petite saillie, disparaissant en grande partie par la pression, ce qui montre que sa rougeur est surtout congestive; (*b*) d'une partie centrale nettement constituée par une vésicule fragile qui, ou bien est excoriée par le grattage et donne naissance à une croûtelle noirâtre, ou bien se déchire, soit spontanément, soit sous le moindre traumatisme, et laisse écouler une sérosité citrine analogue à celle de l'eczéma vulgaire.

Un autre fait capital qui domine l'histoire de l'eczéma papulo-vésiculeux, c'est qu'en un point quelconque du corps, presque toujours aux jambes, ou aux bras, ou sur les pieds, ou sur la face dorsale des mains vers les poignets, on peut trouver un placard éruptif présentant l'aspect ordinaire de l'eczéma vulgaire; cependant, à son niveau, la peau est comme épaissie, profondément enflammée, excoriée, ce qui semble prouver que les éléments constitutifs primordiaux ont été des papulo-vésicules.

L'éruption de l'eczéma papulo-vésiculeux est presque toujours abondante, diffuse, symétrique; assez souvent elle a une tendance marquée à se généraliser. Elle évolue par poussées successives dont la cause provocatrice est variable, souvent impossible à saisir au premier abord. Les poussées peuvent être subintrantes et constituer ainsi des périodes plus ou moins longues de crise, ou bien être séparées par des périodes de repos complet.

Cette forme éruptive est éminemment prurigineuse.

Elle a, au point de vue objectif, les rapports les plus étroits avec:

1. Le *prurigo simplex*, qui en diffère en ce que les éléments éruptifs sont plus franchement urticariens, souvent plus volumineux, un peu moins nettement vésiculeux, et surtout en ce qu'on n'y observe ni placards nets d'eczéma, ni lichenification.

2. Le *prurigo de Hebra*, qui en diffère par sa longue durée, sa ténacité, ses localisations si spéciales, sa tendance si marquée aux lichenifications, etc.

Il est certain que l'eczéma papulo-vésiculeux offre les plus grandes affinités avec le groupe des prurigos: il constitue un trait d'union entre l'eczéma vésiculeux vrai d'une part et les prurigos d'autre part.

Nous avions depuis longtemps établi, en nous fondant sur l'analyse des faits cliniques, que, tandis que les irritations artificielles d'origine externe et que le microbisme banal de la peau jouent un rôle des plus considérables dans l'étiologie et la pathogénie de l'eczéma vésiculeux vrai, ce sont les intoxications accidentelles, les auto-intoxications, les ébranlements subis par le système nerveux qui jouent le rôle majeur dans la genèse de l'eczéma papulo-vésiculeux.

Nous avons étudié cliniquement ce point spécial, et recherché quel est l'état de la nutrition chez les sujets atteints d'eczéma papulo-vésiculeux.

Nous avons choisi pour cela quatorze malades soigneusement diagnostiqués, chez lesquels le type éruptif était d'une parfaite pureté. Nous avons effectué chez eux 300 analyses d'urine en série. Tous ces malades avaient été soumis à un régime rigoureusement déterminé, et leurs coefficients urologiques ont été rapportés aux coefficients normaux pour chaque régime (voir nos travaux antérieurs).

Les deux constatations les plus importantes qui découlent de ces recherches sont les suivantes:

1. Dans 80 % cas, il y avait diminution notable de la perméabilité rénale.

2. Dans 90 % des cas, il y avait augmentation, parfois considérable, des fermentations intestinales.

# ROSACEA: HISTORISCH, KLINISCH UND THERAPEUTISCH

VON DR. P. G. UNNA, HAMBURG

Die meisten Leser werden auf der Universität, in Lehrbüchern oder Zeitschriften als wissenschaftliche Benennung der "roten Nase" oder "Kupfernase" nicht das im Titel angegebene Wort: Rosacea, sondern den Doppelnamen: "Acne rosacea" gehört haben—leider, wie ich gleich hinzufügen muss. Denn wenn irgendwo eine falsche, irrtümliche Benennung auf die Auffassung einer Krankheit eine hemmende u. auf ihre Behandlung eine schädigende Einwirkung gehabt hat, so war es die Klassification der "roten Nase" als: Acne rosacea. Grade hundert Jahre hat diese von *Willan* (1757–1812) u. *Bateman* (1778–1821)[1] eingeführte Bezeichnung die Lehre von der Rosacea verwirrt, u. obwohl alle selbständig denkenden Dermatologen in dem verflossenen Jahrhundert gegen die Einreihung der Rosacea in das Kapitel der Akne mehr oder minder energischen Protest einlegten, so schleppt sich die sogenannte "Acne rosacea" doch noch bis in die neuesten Auflagen der meisten heutigen Lehrbücher fort. Es ist zu hoffen, dass in dem neuen Jahrhundert dieser Anachronismus verschwindet u. einer naturgemässeren Auffassung der Rosacea Platz macht.

In der Tat war diese Benennung u. Klassifikation durch *Willan* u. seine Nachfolger ein Rückschritt gegenüber der bis dahin bei den Schriftstellern des Mittelalters u. der Neuzeit geltenden Auffassung. Bei den letzteren (beispielsweise: *Ambroise Paré, Joh. Riolan, Jr., Astruc, Lorry, Erasmus Darwin, Plenck*) spielt die Affektion unter dem Namen: *Gutta rosea*

[1] *Willans* "Description and Treatment of Cutaneous Diseases" erschien unvollständig in Lieferungen mit Tafeln von 1798–1807. Die Beschreibung der Acne rosacea befindet sich erst in der nach *Willans* Tode von *Bateman* herausgegebenen: "Practical Synopsis" (1813) u. die erste Abbildung in dem Tafelwerk: "Delineations of Cutaneous Diseases" (1815–1817).

eine ganz selbständige Rolle. Der dieser Affektion in Frankreich seit alten Zeiten zukommende populäre Name: Couperose soll (nach *Gibert*) aus Gutta rosea korrumpiert sein. *Plenck* (1738–1807) nahm diesen nicht präjudizierlichen u. —als roter Tropfen, roter Fleck—ganz bezeichnenden Namen mit der auch schon früher gebrauchten, leichten Veränderung: *Gutta rosacea*[1] auf, von der er neun Abarten beschrieb, darunter die Gutta rosacea simplex oenopotorum u. pernionalis.

Wie kam nun *Willan* dazu, den von *Plenck* gebrauchten Namen: Gutta rosacea in Acne rosacea umzuwandeln? (Bekanntlich hat *Willan* nach dem Vorgange des Budapester Professors *Plenck*, welcher 1780 sein System der Hautkrankheiten publizierte u. die äussere Form der Ausschläge zum ersten Male zum Einteilungsprinzip erhob, die Dermatosen ebenfalls nach der äusseren Form in acht Ordnungen gebracht: Papulæ, Squamæ, Exanthemata, Bullæ, Pustulæ, Vesiculæ, Tubercula, Maculæ. Die ganze Ordnung der Tubercula, unter welche *Willan* die Akne einreihte, fehlt noch bei *Plenck;* bei diesem finden sich das Tuberculum und die Vari (Finnen) zusammen in der Ordnung: Papulæ. *Willan* bedürfte, als er seine Ordnung: Tubercula schuf, für die dahin gehörigen Finnenausschläge einer neuen Gattungsbezeichnung u. verfiel merkwürdigerweise auf den bis dahin wenig gebräuchlichen Terminus: *Akne*, anstatt sich der bei den Lateinern üblichen Benennung: *Vari* oder des griechiscben Synonyms: *Ionthos* zu bedienen. Das griechische Wort: *Akne* hatte der byzantinische, im 6ten Jahrhundert lebende Schriftsteller *Aëtius*, dem *Willan* bekanntlich auch das Wort: Ekzem entnahm, als gleichbedeutend mit Ionthos gebraucht. *Sauvages* (1706–1767), der in seiner berühmten: Nosologia methodica (1760) unter Nachahmung von *Linnés*, seines Zeitgenossen u. Correspondenten, "Klassifikation der Pflanzen"

[1] Diese Veränderung von *Rosea* in *Rosacea* hat schon *Ambroise Paré:* "Einem an *Gutta rosacea* leidenden Kranken muss die Vena basilica, alsdann die Stirnvene u. die Nasenvene geöffnet werden und ebenso muss man Blutegel an verschiedene Teile des Gesichtes applicieren. Ebenso setzt man blutige Schröpfköpfe an die Schultern." Ebenso *Fernel* (1679): "Hae pustulae si intensum ruborem habent, *Gutta Rosacea* vocantur, si durae et exiquo et frigido et crasso humore ac velut in callum concretae, *Vari* nominantur."

die Krankheiten in ein naturhistorisches System zu bringen suchte u. offenbar auf *Plenck* u. *Willan* von grösstem Einflusse bei ihrer Bearbeitung der Hautkrankheiten gewesen ist, nahm dieses Wort: Akne als Erster aus dem *Aëtius* auf, verband es mit dem Namen: Psydracia für Eiterpusteln u. nannte die Finnen: Psydracia Akne. *Willan*, hiervon ausgehend, machte nun den Namen Akne zum Gattungsnamen u. gab dieser Gattung folgende Definition: "Tuberkulöse Geschwülste, die langsam eitern u. hauptsächlich dem Gesichte eigen sind." Von irgend einer Beziehung dieser "Tuberkeln" auf die Talgdrüsen ist, wie man sieht, hier noch keine Rede, u. grade weil später, hauptsächlich in Frankreich, der Begriff Akne eine so ungemein grösse Ausdehnung erhielt u. schliesslich nicht bloss alle Entzündungen der Talgdrüsen, sondern sogar viele Funktionsanomalien derselben umfasste, so muss man sich der ursprünglichen Bedeutung dieses Wortes wohl bewusst bleiben. *Willan* u. *Bateman* dachten bei ihrer Gattung Akne so wenig an eigentliche Talgdrüsenaffektionen, dass sie selbst bei Beschreibung der zweiten Art: Acne punctata (unserer heutigen: "entzündeten Mitesser") nur beiläufig erwähnen, dass *zuweilen* in Folge der Ausdehnung der Gänge durch talgartige Materie die "*Drüsen selbst sich entzünden*" u. schwarzpunktierte Tuberkel bilden neben ebensolchen Tuberkeln, auf welchen keine Punkte zu sehen sind.

Diese von der heutigen Anschauung über Akne so gründlich abweichende Ansicht von *Willan* u. *Bateman*, den Schöpfern der neuen Nomenklatur, wird, wenn noch irgend ein Zweifel darüber existieren sollte, durch eine Anmerkung ihres Uebersetzers *Blasius*[1] illustriert, welcher bei Gelegenheit der schwarzen Punkte, welche auf manchen Tuberkeln bei der Akne vorkommen, sagt: "Es sind dies die Komedones, Mitesser oder Zehrwürmer, die *eigentlich garnicht zur Akne gehören* u. nur insofern bei derselben in Betracht kommen als sie sich mit ihr complizieren u. sie veranlassen können. *Die Aufstellung der Acne punctata als einer besonderen Art lässt sich deshalb auch nicht rechtfertigen* und man könnte höchstens daraus eine Varietät der Acne simplex machen."

Versetzt man sich in die Anschauungen *Willans* zurück,

[1] *Bateman*, nach der 7ten Auflage übersetzt, 1835, pg. 330.

so wird man es allerdings gerechtfertigt finden müssen, dass er die Gutta rosacea *Plencks* als 4te Art unter dem Namen Acne rosacea in seine neue Gattung Akne versetzte, denn auch bei ihr kommen "entzündete Tuberkel" im Sinne *seiner* Definition der Akne vor. *Willan* konnte diese Versetzung ohne Skrupel vornehmen, *denn er dachte nicht daran, die Acne rosacea damit* zu einer Talgdrüsenerkrankung stempeln zu wollen. War aber fortan die Rosacea an die Gattung Akne gebunden, so war es auch natürlich, dass sie die sehr bald in Frankreich durch *Rayer* u. *Biett* erfolgende *sprungweise Entwicklung des Aknebegriffes* mitmachen musste u. so nolens volens zu einer Talgdrüsenaffektion wurde, d. h. in eine ganz schiefe Stellung geriet.

Doch verweilen wir zunächst ein wenig bei *Willans* und *Batemans* Zeitgenossen. Der bedeutendste gleichzeitig mit *Willan* in Frankreich lebende Dermatologe war *Alibert* (1766–1837). Er war bei der Schöpfung seines ersten grossen Werkes: "Description des maladies de la peau, observées à l'hôpital St. Louis" (1806–1827) noch ganz unbeinflusst von *Willan*. Demgemäss ist die Rosacea bei ihm bei den "Dartres" und zwar den "Dartres pustuleuses" zu finden unter dem deskriptiv ganz passenden Namen: "Dartre pustuleuse Couperose (Herpes pustulosus gutta-rosea)." Die beigegebene Abbildung (Tafel 21) zeigt einen weiblichen Kopf mit einer starken Röte in Schmetterlingsform auf Nase und Wangen und nur sehr wenigen Papeln und Pusteln.[1] In der Beschreibung wird auf die diffuse Rötung (Couperose) das meiste Gewicht gelegt. Diese Form des "pustulösen Herpes" folgt im Werke von *Alibert* auf eine andere: "Dartre pustuleuse mentagre," aus deren Abbildung wir unschwer die Diagnose Sykosis oder besser die eines schuppigen Ekzema barbæ mit Eiterpusteln an den Haarfollikeln machen können. Die Bezeichnung als Dartre und Herpes sowie die Verwandschaft mit dem Ekzem des Bartes, alles beweist, dass der noch von *Willan* unbeeinflusste *Alibert* die Couperose des Volkes wissenschaftlich zu einer "Flechte," einer *ekzemartigen Krankheit* machen wollte. Zwischen dieser ersten Auflage von

[1] Die entsprechende Tafel bei *Bateman* (Tafel 64) zeigt einen männlichen Kopf mit geringerer Röte in Schmetterlingsform, mehr Angiektasien und viel zahlreicheren "Tuberkeln," das ist Papeln und Pusteln.

*Aliberts* Hauptwerk und der zweiten, welche 1835 unter dem Titel: "Monographie des Dermatoses" erschien, liegt ein unscheinbares, aber für die Dermatologie folgenschweres Ereignis, die Reise von *Biett* nach England. *Biett* (1781–1840), 15 Jahre jünger als *Alibert*, mit diesem befreundet und von demselben wesentlich gefördert und an das Hospital St. Louis gezogen, lernte in England das System von *Willan* und *Bateman* kennen und suchte dasselbe nach seiner Rückkehr durch Schrift (Dictionnaire de Médicine) und Vorträge einzubürgern. Obwohl *Alibert* im grossen und ganzen auf seinem rein klinischen Standpunkt beharrte und es zwischen ihm und seinem einstigen Schüler zu einer Rivalität kam, welche die damalige französische Dermatologie in zwei Schulen, die *Willan-Bateman*'sche und die *Alibert*'sche teilte, hat die Richtung von *Willan* mit ihrer Betonung der Wichtigkeit der Effloreszenzen und mit ihrer einseitigen, aber praktischen Klassifikation nach diesen äusseren Merkmalen doch zweifellos Einfluss auf die weitere Ausgestaltung des *Alibert*'schen Systems geübt. Im Jahre 1828 erschien das Lehrbuch von *Bietts* Schülern: *Cazenave* und *Schedel*, welches als erstes Lehrbuch der *Willan*'schen Schule in Frankreich anzusehen ist, und demgemäss finden wir in der 7 Jahre später erschienenen zweiten Auflage von *Alibert* ein eigenes Genre II: *Varus* der Dermatoses dartreuses, welches der *Willan*'schen Gattung Akne nachgebildet ist und neben dem Varus Comedo, Varus disseminatus, Varus frontalis, dem Hordeolum und dem Varus mentagra auch den *Varus guttarosea* enthält. So gelangte die Couperose auch in Frankreich wissenschaftlich definitiv unter die Finnenkrankheiten, allerdings nicht unbestritten.

Schon *Rayer* (1793–1867)[1] sagt: "Da man in Frankreich mit dem Namen Couperose eine chronische, pustulöse Entzündung der Talgdrüsen der Gesichtshaut zu bezeichnen pflegt, so glaubte ich dem Begriffe Akne eine beschränktere Bedeutung geben zu müssen. . . . Ich habe die beiden Formen nur deshalb getrennt, um die gewöhnlich Couperose genannte, sehr hartnäckige Krankheit des Gesichtes von der oft durchaus nicht schlimmen, mitunter auch auf die Haut des Rumpfes be-

[1] Traité théorique et pratique des maladies de la peau. 1826.

schränkten, in der Jugend vorkommenden Akne zu unterscheiden."

Demgemäss hat *Rayer* hinter einem ausführlichen Kapitel Akne ein ebenso sorgfältig gearbeitetes, selbständiges Kapitel über Couperose.

Ebensowenig wie *Rayer* lässt sich *Devergie*[1] (1798–1879) seine selbständige Beobachtung durch die neue, von England aus eindringende Lehre beeinflussen.[2] Er macht noch entschiedener gegen die Unterordnung der Couperose unter die Akneformen Front als jener. Während *Rayer* hauptsächlich die verschiedene Prognose und Lokalisation und das verschiedene Alter der Patienten bei beiden Krankheiten hervorhob, spricht sich *Devergie* folgendermassen aus:

"Die Couperose ist eine Krankheit der Blutkapillaren der Haut. Wenn die Talgdrüsen hin und wieder affiziert werden, so ist es nur zufällig; deshalb trenne ich die Couperose von der Akne, welche die Mehrzahl der Autoren mit dieser Krankheit zusammengeworfen hat. Beobachtet man aber die Couperose in ihrem Beginne, beobachtet man ihr Fortschreiten, ihre Entwicklung, ihren Ausgang, so wird man uns zugeben, dass unsere Trennung gerechtfertigt ist."

*Devergie* unterscheidet nun drei Grade der Affektion, die Couperose als einfaches Erythem ohne Verdickung der Haut, diejenige mit Verdickung der Haut und die tuberöse Form und fügt hinzu:

"Nur in der Form mit allgemeiner Verdickung der Haut sieht man accidentelle Aknepusteln aufschiessen unter der Form von mehr oder weniger grossen Knoten, die zur Vereiterung kommen; aber dieser Zustand ist nur vorübergehend und vollständig accidentell."

Diesen selbstständigen Geistern gegenüber steht aber eine weit grössere Menge unselbständiger Autoren in England, Frankreich und Deutschland, bei welchen nach dem Vorgange von *Willan* und *Biett* die Rosacea kurzweg als Varietät der Akne erscheint, meistens auch unter dem Namen:

[1] Traité pratique des maladies de la peau. 1854.

[2] Es ist interessant, dass vor den französischen Dermatologen der ersten Hälfte des vorigen Jahrhunderts es auch *Rayer* und *Devergie* hauptsächlich sind, welche in der Ekzemfrage *Willan* gegenüber ihre Selbständigkeit wahrten.

Acne rosacea, so bei *Green* (1838), dem *jungen Erasmus Wilson* (1846), *Neligan* (1852), *Nayler* (1866) in England, bei *Gibert* (1840), *Duchesne-Duparc* (1859),[1] *Bazin* (1868) in Frankreich, *Fuchs* (1840), *Riecke* (1841), *Kleinhans* (1866) in Deutschland. Interessant ist es aber, dass der einzig bedeutende Engländer unter denselben: *Erasmus Wilson* sich bei gereifter Erfahrung in einem späteren Werke von der *Willan-Biett*'schen Lehre frei machte. In seinen 1871 erschienenen "Lectures" benennt *Wilson* die Affektion wieder mit dem alten Namen: Gutta rosea und sagt: "Gutta rosea has heretofore been confounded with acne under the name of acne rosacea" (p. 135). *Bazin* hingegen machte einen Weg in umgekehrter Richtung. In der ersten Auflage seiner: "Leçons théoriques et cliniques sur les affections cutanées de nature arthritique et dartreuse (1860, von *Sergent* redigiert) sagt er: "Die Couperose ist eine erythematöse Affektion, characterisiert durch die Erweiterung der Gefässkapillaren der Haut. Die meisten Autoren haben sie mit Unrecht mit der Acne rosacea zusammengeworfen; denn wenn Aknepusteln sich auf den Flecken der Couperose entwickeln, so geschieht es nur zufällig und als Complication; ich werde daher die Couperose getrennt von der Acne rosacea beschreiben." In der zweiten Auflage desselben Werkes (1868, von *Besnier* redigiert) heisst es: "In meinen Vorlesungen von 1860 habe ich beide Affektionen getrennt. Aber seitdem habe ich erkannt, dass bei der Couperose, die wesentlich durch die Entwicklung einer erythematösen Röte von grösserer oder geringerer Intensität characterisiert wird, immer und selbst von Anfang an eine Anschwellung der Talgdrüsen, rudimentärer Pusteln, besteht." Demgemäss behandelt er wieder beide Affektionen in einem Kapitel unter dem Titel: "Acné rosée ou Couperose arthritique."

Wir kommen nun zu dem wichtigsten Werke der 2ten Hälfte des vorigen Jahrhunderts, zum Lehrbuche *Ferdinand Hebras* (1860). Wie dasselbe epochemachend und für lange Zeit massgebend auf alle Teile der Dermatologie gewirkt hat, so entschied es auch die Rosaceafrage auf mehrere Jahrzehnte hinaus. Wenn noch heute die meisten Lehrbücher

[1] Unter dem Namen: Varus érythémateux-pustuleux.

ein Kapitel Acne Rosacea führen, so ist dieser Anachronismus wohl sicher die Folge der treuen Anlehnung fast aller späteren dermatologischen Werke an *Hebras* Lehrbuch. Um so wichtiger ist es, die Begründung kennen zu lernen, welche *F. Hebra* für seine Entscheidung in der Rosaceafrage gibt. Er sagt: "Aus den angeführten geschichtlichen Daten ist ersichtlich, dass viele unserer Vorfahren und Zeitgenossen die Acne rosacea als eine Species der überhaupt Akne genannten Krankheit auffassen und auch das Wesen der Couperose nur in einer Entzündung der Talgdrüsen suchen. Schon im Jahre 1845 habe ich bei Veröffentlichung meiner Einteilung der Hautkrankheiten mich dahin ausgesprochen, dass die Acne rosacea nicht in einem exsudativen Prozesse, sondern in einer Gefäss- und Zellgewebsneubildung bestehe, dass dieselbe jedoch auch häufig mit Acne disseminata combiniert sei, und aus diesem Grunde ihre Besprechung eigentlich in dem Kapitel über Neubildung stattfinden sollte. Wenn ich aber auch gegenwärtig es für zweckmässiger erachte, der Acne rosacea an diesem Platze und zwar in Gesellschaft mit den anderen Akne genannten Krankheiten gebührende Betrachtung zu widmen, so ist hierzu nicht etwa eine eingetretene Aenderung meiner früheren Ansichten über das Wesen dieser Krankheit Veranlassung gewesen, sondern mein Bestreben, in meinem System, nach Art der Naturhistoriker die Hautkrankheiten in Gruppen zusammenzustellen, wobei ich auf die Aehnlichkeit oder Gleichartigkeit aller Erscheinungen Rücksicht nehme, nicht aber bloss *Ein* Kriterium als Einteilungsgrund gelten zu lassen für zweckmässig halte. *Ich bin demnach immer noch der festen Ueberzeugung, dass bei Acne rosacea die allenfalls vorhandene Entzündung der Schmeerdrüsen und der Hautgebilde selbst nur eine zufällige, allerdings häufig vorkommende* Complication der Krankheit ausmache, ohne dass dieselbe zur Characteristik der Krankheit erforderlich wäre. Den Beweis für die Richtigkeit und Berechtigung dieser Auffassung liefert die tägliche Erfahrung, zu deren Würdigung wir auf die folgende Beschreibung der Symptome und des *Verlaufes* der Acne rosacea verweisen." Wir entnehem diesen einleitenden Worten zunächst mit Befriedigung, dass auch *F. Hebra*, wie alle selbständigen

Beobachter vor ihm, zwischen den Formen der Akne und denen der Rosacea nur *eine äussere Aehnlichkeit* wahrnahm, beide Erkrankungen aber für *wesentlich verschieden* ansah. Um so mehr überrascht deshalb die Logik der Schlussfolgerung, dass trotzdem die Rosacea bei den Akneformen abzuhandeln, mithin auch der Terminus: Acne rosacea beizubehalten sei. *F. Hebra* sagt mit Recht, eine Gruppenbildung müsse nicht nur auf *Ein* Kriterium, sondern auf die Aehnlichkeit oder Gleichartigkeit aller Erscheinungen hin gegründet werden, und nun stellt er doch, grade nur wegen *eines einzigen Symptoms, der Talgdrüsenerkrankung*, die Rosacea zur Akne, während alle übrigen Symptome beider Erkrankungen verschieden sind; er tut also grade das bei der Rosacea, was er bei seinem ganzen System zu vermeiden wünscht. *Hebra* betont nämlich nicht nur—wie *Rayer* und *Devergie* vor ihm —die der Rosacea allein zukommenden Symptome der Kapillarerweiterung und eigentümlichen Schlängelung der grösseren Blutgefässe, die roten Protuberanzen ohne eitrigen Inhalt, die bei maximaler Entwicklung zu den Verunstaltungen des Rhinophyms führen, die Beschränkung auf das Gesicht, die subjektiven Empfindungen, die Variabilität der Bilder im Anfange und im Verlaufe der Krankheit, er stellte sogar schon 15 Jahre früher in einem eigenen Artikel die Behauptung auf, dass die Rosacea gar nicht zu den exsudativen, sondern zu den proliferativen Prozessen gehöre, eine in dieser extremen Weise sogar *neue* Anschauung, deren konsequenz ebenfalls nur in einer vollkommenen Trennung der Rosacea von der Acne bestehen kann. Trotz aller dieser Verschiedenheiten soll nun wiederum die Rosacea eine Abart der Acne sein, auf das *einzige Symptom der Talgdrüsenerkrankung* hin, und von *diesem Symptom* sagt dabei *Hebra* ausdrücklich, dass *es fehlen könne*, dass es *eine zufällige Komplikation* sei.

Kurz, *Hebra* verwirft auf der einen Seite jede Gruppierung und Zusammenstellung von Hautkrankheiten bloss auf *ein Symptom* hin und behauptet, dass dieses Verfahren nicht das seinige sei, erweist dann, dass Rosacea und Akne zwei *wesentlich verschiedene* Krankheiten sind, stellt sie nun aber doch in eine Gruppe bloss auf *ein Symptom* hin und behauptet gleichzeitig noch, dass dieses *eine Symptom* bei der Rosacea

*auch fehlen könne*, sodass in diesem letzteren Falle nach seiner eigenen Anschauung Rosacea und Akne zusammengestellt wären, *ohne ein einziges Symptom gemeinsam zu haben.* Versteht ein lebender Fachgenosse die Logik dieses Verfahrens?

In diesem Falle hat einmal die Autorität des Autors die Zeitgenossen für den handgreiflichen Mangel an Logik blind gemacht; die gelungene, ja drastische, mit *Hebra*'scher Virtuosität gegebene klinische Schilderung liess die fehlerhafte Einrahmung des Bildes völlig vergessen. Leider hat aber dieser überflüssige Anachronismus, von *Hebra* in unverständlicher Weise sanktioniert, auf lange Zeit in der Literatur Bürgerrecht gewonnen. Zunächst waren es die Schüler *Hebras*, welche in ihren Compendien die so gefasste Lehre von der "Acne rosacea" aufnahmen: *I. Neumann* (1869), *Kaposi* (1879), *Hebra jr.* (1884), dann wurde dieselbe gewissenhaft in die übrigen deutschen Lehrbücher von *Behrend* (1879), *Veiel* (1884), *Lesser* (1885), *Joseph* (1892), *Wolff* (1893) *Kopp* (1893), *Thimm* (1901) *Neisser* und *Jadassohn* (1901), *Jessner* (1902), *Kromayer* (1902) übernommen.

Allerdings variiert die *Begründung* dieser Unterbringung der Rosacea bei der Akne etwas. *Neisser* und *Jadassohn*[1] widmen der "Rosacea," einem Leiden mit vielgestaltiger Aetiologie ein eigenes Kapitel, führen dann aber die "Acne rosacea" im Aknekapitel (pg. 162) besonders auf als eine Complication der Rosacea mit der Acne vulgaris. *Jessner*[2] erwähnt verschiedene Möglichkeiten: die Rosacea besteht für sich, oder es tritt sekundär Akne hinzu, oder zu einer Akne gesellt sich die Rosacea. Dieser "*Complicationstheorie*," welche die vorhandenen Schwierigkeiten allerdings theoretisch auf eine einfache Weise zu beseitigen scheint, huldigen mehr oder weniger ausgesprochen die meisten Autoren. Hin und wieder leuchtet ein Schimmer besserer Erkenntniss auf, aber gleich versinkt er wieder in dem Grau des Dogmas. So sagt *Joseph*[3]: "Streng genommen müssten wir allerdings diese Affektion nicht unter den einfachen entzündlichen Hautkrankheiten anführen, sondern sie den Zirculationsstörun-

[1] Krankheiten der Haut in *Ebsteins* Handbuch der prakt. Medizin.
[2] Dermatologische Vorträge. Heft 2. Acne. 1902.
[3] Lehrbuch der Haut- und Geschlechtskrankheiten. II Aufl. 1895.

gen, resp. in späteren Stadien den progressiven Ernährungsstörungen der Haut einreihen. Indessen ziehen wir es vor, dem Vorgange *Hebras* folgend, *aus Zweckmässigkeitsgründen* schon hier die Acne rosacea zu besprechen, *da sie sich klinisch schwer von der Acne simplex trennen lässt.*" Eine bessere Begründung als bei *F. Hebra* kann ich allerdings hierin nicht erkennen.

Ganz ohne Widerspruch blieb diese Auffassung allerdings innerhalb der Wiener Schule auch nicht. *Auspitz*[1] stellt die Acne rosacea zu seinen "angioneurotischen Dermatosen" unter dem Namen: *Erythema angiectaticum* und erklärt sie für eine vasomotorische Störung mit Gefässdilatation und Gefässneubildung. *Jarisch*[2] sagt: "Von allen Erkrankungen, welche den Namen der "Akne" führen, gebührt derselbe am wenigsten der in Rede stehenden Form, nachdem die bei derselben zu beobachtenden Follikelentzündungen nur die Bedeutung sekundärer Vorgänge haben, welche lange Zeit hindurch vollkommen fehlen können. Die Grundlage des Leidens bilden hyperämische Vorgänge" etc. Trotzdem handelt es sich auch bei *Jarisch*, wenn auch nur sekundär, um Hinzutreten von "Akneknoten." *Lang*[3] endlich zieht von allen Schülern *Hebras* als Erster die Konsequenz der *Hebra*'schen Lehre und behandelt die Acne rosacea unter dem Hauptnamen Rosacea bei den Neubildungen. Er sagt: "Durch die irrige klinische Vorstellung, die man von der Kupferrose hatte, kam sie nicht nur zur Bezeichnung Akne, sondern wurde auch meist der Acne vulgaris angereiht; doch handelt es sich um eine Neubildung, die sich in den leichtesten Fällen bloss auf Erweiterung und geringe Vermehrung der Gefässe bezieht, während in den fortgeschrittensten und hochgradigen Fällen das Bindgewebe und die Talgdrüsen neben den Gefässen in erheblichem Masse an der Neubildung teilhaben." Konsequenterweise bezeichnet *Lang* die bei der Rosacea auftretenden Knötchen und Knoten auch nicht mehr als Akneknoten, indem er auch hier mit der alten *Willan*'schen Anschauung definitiv bricht.

[1] System der Hautkrankheiten. 1881.
[2] Die Hautkrankheiten. 1900. S. 445.
[3] Lehrbuch der Hautkrankheiten 1902, pg. 586.

Was *Lang* in letzter Zeit für die Rosacea innerhalb der Wiener Schule leistete, tat *Hardy*[1] etwas früher innerhalb der französischen. Unter dem Namen Acné congestive ou Couperose trennt er die Rosacea vollständig von den Akneformen ab und bespricht sie im Kapitel der "Congestions cutanées." Er sagt: "Die congestive Akne, die sich auf eine Störung der kapillaren Zirculation der Gesichtshaut bezieht, muss sorgfältig von den anderen Aknearten geschieden werden, von denen sie sich wesentlich durch den anatomischen Sitz unterscheidet; auf sie muss der Name Couperose beschränkt bleiben, der mit Unrecht als Synonym von Acné gebraucht worden ist." Bald darauf erfahren wir auch aus einer Anmerkung von *Besnier* und *Doyon*,[2] was denn eigentlich im heutigen Frankreich der Sinn des specifisch französischen Ausdrucks "Couperose" ist, der sich neben dem der Acne rosacea daselbst seit 100 Jahren erhalten hat: "In Frankreich will der Ausdruck: Couperose einfach sagen: *permanente Congestion des Gesichtes*, mit oder ohne Follikulitiden, mit oder ohne Varikositäten. Man sagt: Diese Person ist couperosée, teint couperosé, etc. Im allgemeinen wird dem Wort Couperose von den Laien eine ominöse Bedeutung zugelegt; dieselbe Patientin, die trostlos sein würde, wenn ihr Arzt zugibt, dass sie an Couperose leidet, ist voll Zuversicht, wenn er ihr erklärt, sie leide bloss an einer congestiven oder erythematösen Akne. Medizinisch ist der Ausdruck angenommen und annehmbar; indessen ist er doch wenig gebräuchlich, und es erscheint uns unnütz, ihm eine präzisere und solidere Deutung zu geben als ihm tatsächlich zugestanden wird."

Aus dieser Bemerkung können wir mancherlei entnehmen. Zunächst, dass das Wort Couperose in Laienkreisen einen weniger gutartigen Sinn hat als Akne, was wohl damit zusammenhängt, dass schon der Laie merkt: die Comedonenakne vergeht mit der Zeit, die rote Nase bleibt mir oder wird schlimmer mit der Zeit. Sodann, dass die französischen Aerzte, welche von den konstitutionellen Wesen der Rosacea über-

[1] Traité des maladies de la peau, 1886, pg. 530.

[2] Notes et additions zur französischen Uebersetzung des Lehrbuches von Kaposi, 2te Aufl. 1891, pg. 750.

zeugt sind, es nicht vermocht haben, durch eine einfache Heilung das Publicum von der Benignität der Rosacea allmählich zu überzeugen. Endlich geht für uns noch daraus hervor, dass das Wort: Couperose in Frankreich kaum eine wissenschaftliche Verwertung finden wird und der Terminus Rosacea auch dort für eine von der Akne unabhängige Krankheit frei ist.

Auch *Leloir* und *Vidal* (1889) trennen wohl noch die Rosacea unter dem Namen Couperose von der Akne, reihen sie derselben aber doch direkt an, "da die Aknepustel eines der wesentlichen Elemente der Kupferrose in ihrem entwickelten Stadium" und diese "eigentlich nichts als eine auf chronisch congestionischer Haut entwickelte Akne" ist. So ist es denn nicht wunderbar, dass auch in die neueren französischen Lehrbücher die Theorie von der "zufälligen Complikation der zwei eigentlich nicht zusammengehörenden Affektionen Akne und Rosacea" Eingang gefunden hat.

*Tenneson* (1893), obwohl er für Rosacea eine andere Behandlung, nämlich eine Ekzembehandlung (mit Caoutchouc und Maske) empfiehlt, hält die Acne rosacea doch für eine "Association zweier distinkter Affektionen."

*Brocq* (1892) in seinem "Traitement des maladies de la peau" bedient sich des Ausdrucks: Acné rosacée, motiviert aber diese Wortzusammenstellung in einer ganz *neuen Weise*, nämlich durch *therapeutische Rücksichten.* Er sagt: "Die klinischen Typen, die man übereingekommen ist unter dem Namen Couperose zusammenzufassen, sind sehr verschiedener Art. Gewisse derselben scheinen uns durchaus nicht unter die "Acnés" in eigentlichem Sinne eingereiht werden zu können. Wir studieren sie hier nur, um die *Darstellung der Behandlung zu erleichtern, welche bei allen ihren Varietäten sozusagen dieselbe ist wie bei den Varietäten der wahren Acne.*" In *Brocqs* neuem Lehrbuch "Traité élémentaire de Dermatologie pratique" (1907) kehrt (Bd. I, pg. 830) derselbe Satz wieder, wie denn auch das ganze Kapitel ziemlich wörtlich dasselbe gibt wie dasjenige des älteren Werkes von 1892.

*Dubreuilh* hat als der Erste in Frankreich in seinem Leitfaden (1899) folgenden Satz aufgestellt, obwohl er in Bezug auf die Pathogenese der Rosacea der Complikationstheorie huldigt:

"Das seborrhoische Ekzem des Gesichtes ist zuweilen sehr schwer von der Acne Rosacea zu unterscheiden; es unterscheidet sich durch seine Neigung, Gruppen oder umschriebene Flecke zu bilden, aber nicht selten sieht man beide Affektionen kombiniert auf einer seborrhoischen Haut, unter dem Einflusse seborrhoischer Bedingungen. *Diese intermediären Formen zwischen Acne rosacea und Ekzem* sind besonders von *Brocq* studiert worden."

Dieser Satz erweckt ja fast die Vorstellung, als wenn *Dubreuilh* und *Brocq* hin und wieder Uebergänge von der Rosacea zum Ekzem sehen würden. Das ist aber durchaus nicht der Fall. Weder bei *Dubreuilh* noch bei *Brocq*, selbst in dessen neuestem Lehrbuch, spielt das seborrhoische Ekzem *in der Aetiologie der Rosacea* die geringste Rolle. Nach ihrer Auffassung handelt es sich in solchen Fällen immer nur um eine "Complication."

Auch die jüngsten französischen Autoren reproducieren immer nur wieder mit anderen Worten die "Complicationstheorie," so *Hallopeau* in *Robins* "Traité de Thérapeutique appliquée" (1897), *Leredde* ("Thérapeutique des maladies de la peau," (1904), endlich *Thibierge* in dem grossen Sammelwerke: "La pratique dermatologique" (1900). Letzterer sagt nach einem kurzen Exposé über die Vermischung der zwei Grundfaktoren: der Gefässerweiterung und der "Acné pustuleuse" bei dieser Erkrankung: "Nach unserer Ansicht ist die formelle und absolute Trennung der Couperose von der Acné rosacée vraie zur Zeit unmöglich; wenn die Couperose auch in der Tat sehr lange in einem rein kongestiven Stadium bestehen kann, geht sie doch gewöhnlich später oder früher in eine Acne rosacea mit Pusteln über." Aus diesem einen Satze geht die ganze Schwierigkeit der Sachlage für die modernen französischen Dermatologen hervor; ja, die Unmöglichkeit, in Frankreich zu einer einfachen und klaren Begriffsbestimmung auf dem Gebiete dieser Hauterkrankung zu kommen. Gewiss had *Thibierge* recht, dass es unmöglich ist, die Couperose von der "Acne Rosacea" zu trennen; darum handelt es sich aber ja auch gar nicht. Es handelt sich vielmehr darum, die Couperose (unsere Rosacea) von der "Akne" zu trennen, und das ist ganz leicht. Wenn die französischen Autoren doch nur

einsehen wollten, wie grosse Schwierigkeiten sie sich künstlich grossgezogen haben durch ihren orthodoxen und besonders in neuerer Zeit übertriebenen *Willan*ismus, der dem Worte Akne eine immer grössere Ausdehnung gibt. Anstatt das Wort Akne, das *Willan* zu einem Gattungsnamen für verschiedene Zustände machte, seines Gattungscharakters zu entkleiden und in moderner Denkungsweise *einer einheitlichen Krankheit, einem pathologischen Individuum* anzuhängen, erweiterten sie den Begriff Akne so lange, bis er zu ihrem eigenen Leidwesen auch die Couperose umfassen konnte. Statt die Individuen "Rosacea" (Couperose) und "Acne" (juvenilis) scharf zu trennen und dann diese Namen ängstlich bei anderen Affektionen zu meiden, machten sie aus der Akne ganz unnötigerweise ein Synonym des viel ausdrucksvolleren Begriffs "Folliculitis." Fanden sie nun *irgend eine "Folliculitis"* auch bei der Rosacea, so sank diese, allem natürlichen pathologischen Instinkt zum Trotz, in den alleinseligmachenden Schoss der "Akne" zurück. Uns genieren dagegen die Follikulitiden bei der Rosacea nicht im mindesten, denn wir haben den Begriff *"Akne" auf die Acne juvenilis mit echten Comedonen* beschränkt, und da wir bei den Papel-Pusteln der Rosacea die *echten Comedonen* vermissen, so ist für uns die *Rosacea pustulosa* auch keine "Complication mit Acne punctata," sondern eine Komplikation mit irgendwelcher Folliculitis, deren Natur noch näher bakteriologisch zu bestimmen ist und die wahrscheinlich nur eine Steigerung derselben Entzündung darstellt, die überhaupt die Rosacea charakterisiert.

Ich sagte, die jüngeren französischen Autoren sind orthodoxe *Willan*isten. Das waren die älteren französischen Autoren noch nicht. *Rayer, Devergie* und *Hardy* machten bemerkenswerte Ansätze dazu, aus dem Netze *Willan*'scher Gattungsbegriffe heraus zu kommen. Ihr klinischer Takt wies sie darauf hin, die alte französische Couperose von der neuen englischen Akne zu unterscheiden. Da sie aber nicht gleichzeitig den Begriff Akne eng genug und scharf definierten, verstrickten sich ihre Nachfolger wieder in dem *Willan*'schen Netze der alles umfassenden Akne.

Eine ganz ähnliche Entwicklung nahm die Rosaceafrage

in Nordamerika. Am Anfange stehen die beiden Lehrbücher von *Piffard:* "An Elementary Treatise upon Diseases of the Skin" (1876) und "A Treatise on the Materia Medica and Therapeutics of the Skin" (1881). In dem ersteren Lehrbuch nennt *Piffard* die Affektion kurzweg Rosacea und sagt: "Die Affektion wird gewöhnlich mit der Akne als eine Varietât der letzteren in eine Klasse gebracht und häufig Acne rosacea, zuweilen auch Gutta rosea genannt. Erstere Benennung ist unphilosophisch, insofern wir Akne als eine Affektion der Talgdrüsen definiert haben." Im zweiten sagt er—wohl der erste Autor, der sich so deutlich ausdrückt—: "Die abgerundeten Erhebungen oder Knötchen (Tubercles) *sind keine Akneknötchen*, sondern Verdickungen der ganzen Haut, die natürlich viele Talgdrüsen einschliessen." Dem gegenüber vertreten wieder *Duhring* in der ersten Auflage seines Lehrbuches: "A Practical Treatise on Diseases of the Skin" (1877), *Bulkley* in seiner Monographie: "Acne" (1885), *Ravogli* in seinem Buch über "Die Hygiene der Haut" (1888), und *Hyde* und *Montgomery* in ihrem Lehrbuch der Hautkrankheiten (1901) die Complicationstheorie der neueren deutschen und französischen Autoren. Keiner von ihnen betont diesen Standpunkt so energisch wie *Bulkley:* "Manche Fälle dieses Ausschlags weichen so erheblich von den anderen Akneformen ab, dass einige Autoren dazu verleitet wurden, die Acne rosacea ganz von der Gruppe der Talgdrüsenerkrankungen zu trennen und sie bloss als Rosacea zu bezeichnen. *Wilson* reiht sie sogar unter die Ekzeme ein mit der Bezeichnung Gutta rosea. Aber genauere Beobachtung der Krankheit, sowohl in klinischer wie pathologischer und therapeutischer Hinsicht und weiter die häufige Combination mit anderen Akneformen deuten stark auf ihren Zusammenhang mit den letzteren hin und bestätigen die Meinung derer, die sie seit langem als eine Form der Akne angesehen haben." Das neueste Lehrbuch von *Stelwagon* (1902), dem hervorragendsten Schüler *Duhrings*, nimmt ein[illegible]ektiveren Standpunkt ein, geht aber der Entscheidung [illegible]n Anschauungen von *Piffard* und *Bulkley* aus dem [illegible]*lwagon* sagt: "Die Akne oder aknegleichen [illegible]d meistens denen der gewöhnlichen Akne ähn-[illegible]her Affektion die Acne rosacea sicher Beziehungen

hat, obgleich dieses neuerdings von anderen Autoren geleugnet wird, welche die papulösen und pustulösen Läsionen für ganz verschieden von denen der Akne erklären." Hierzu ist nur zu bemerken, dass die Trennung der *Willan*'schen Acne rosacea von der Akne schon *sehr alt* ist und die Opposition gegen *Willans* Klassifizierung unmittelbar, in Frankreich schon von *Rayer* und zwar sachlich und formell, in Deutschland von *Hebra* allerdings nur sachlich eingeleitet wurde, also jedenfalls von Dermatologen ausging, denen man—entgegen der Ansicht von *Bulkley*—grade eminente *klinische Beobachtungsgabe* zugestehen muss. Den Irrtum von *Stelwagon* hebe ich nur hervor, weil er ein allgemeiner zu sein scheint. Die ältere Generation der Dermatologen von heute ist innerhalb der von Frankreich ausgehenden Strömung aufgewachsen, die den Begriff Akne als Gattungsnamen ungebührlich erweiterte. Hierdurch wurden die *noch älteren*, grade auf richtiger, klinischer Einsicht ruhenden Anschauungen über Rosacea zurückgedrängt, und wenn wir heute den letzteren wieder und dieses Mal endgültig zum Siege verhelfen wollen, so gehen wir damit zunächst nur wieder auf den *alten Standpunkt* vor und direkt nach *Willan* zurück.

Ich komme nun zu den neueren englischen Autoren und habe diese bis zuletzt aufgespart, weil sie auf dem so oft angedeuteten Wege der Reform des Rosaceabegriffes am weitesten fortgeschritten sind. Hier zeigt uns die historische Betrachtung das umgekehrte Bild wie auf dem Kontinent und in Nordamerika. Ausgehend von der allgemeinen Befangenheit im allzu weiten Aknebegriff, haben sich die Engländer in ihren Hauptvertreten neuerdings zu einer völligen Trennung der Rosacea von der Akne entschlossen. *Tilbury Fox* (1873) ist noch überzeugter Anhänger der Complicationstheorie. Er sagt: "Es scheint ziemlich viel Unbehagen in den Köpfen der Dermatologen hinsichtlich der Stellung erzeugt zu sein, welche die Acne rosacea in den Nosologien der verschiedenen Autoren einnimmt. Doch ist die Sache im ganzen nicht von grosser Bedeutung, ob man die Acne Rosacea als Akne oder als chronische Hautentzündung klassifiziert. Sie ist: a composite affair." Ebenso spricht sich *Jamieson* aus (1888). *Crocker* dagegen vermeidet in seinem Lehrbuch (1888), obwohl er die

Affektion Acne rosacea betitelt, prinzipiell jede Bezugnahme auf Akne und schildert die Papeln und Pusteln einfach als begleitende Talgdrüsenentzündungen. *Malcolm Morris* (1894) nimmt auch nicht mehr *im Namen* Bezug auf Akne. Er nennt die Affektion einfach Rosacea, beschreibt sie unter den entzündlichen Erythemen und bewertet die Papeln und Pusteln nur als gelegentliche und sekundäre Talgdrüsenentzündungen. Noch deutlicher und ausführlicher in derselben Richtung spricht sich *McCall Anderson* in seinem Lehrbuch (2ste Auflage, 1894) aus. Er sagt: "Die *Rosacea* ist gewöhnlich als eine Varietät der Akne angesehen worden; daher der Name Acne rosacea. *Dieser Irrtum*—dessen Aufdeckung wir *Hebra* verdanken—ist entstanden, weil bei beiden Affektionen das Gesicht befallen ist, weil sie sich gelegentlich kombinieren können und sich oft oberflächlich ähnlich sehen. Aber, wie wir gleich sehen werden, ist der pathologische Prozess völlig verschieden von dem der Akne." Zum Schlusse der von der Akne völlig abstrahierenden klinischen Schilderung gibt dann *McCall Anderson* sogar eine detaillierte Differentialdiagnose zwischen Rosacea und Akne. Der modernste unter allen Lehrbuchverfassern ist aber ohne Zweifel *Norman Walker* (1899) und sein Buch zugleich das einzige Lehrbuch, in welchem *meine vor* 20 *Jahren* (1887) *aufgestellte Lehre, dass die Rosacea nur eine Form des seborrhoischen* Ekzems sei, völlig zum Durchbruch gekommen ist. Ich kann mir daher nicht versagen, einen Passus aus *Walkers* "Introduction to Dermatology" anzuführen: "Das Wort Akne in Verbindung mit der Rosacea verliert täglich und verdienterweise mehr und mehr seine Stelle. Man wandte es an, weil häufig bei der Rosacea Pusteln gefunden werden, die eine oberflächliche Aehnlichkeit mit denen der Acne vulgaris haben. Die älteren Lehrbücher widmeten den Unterschieden zwischen beiden Arten von Pusteln einen beträchtlichen[1] Raum, aber diese lassen sich leicht in der einen Tatsache zusammenfassen, dass bei der Akne der Comedo der Ausgangspunkt der Krankheit und das Centrum jeder Pustel bildet, während bei der Rosacea die Pusteln sekundär und ohne notwendige Beziehung zu den Talgdrüsen sind. Ohne ein neurotisches

[1] Leider einen nur zu geringen.—*U.*

Element bei gewissen Rosaceafällen ableugnen zu wollen, ist es so gut wie gewiss, dass die grösste Majorität aller Fälle durch Seborrhoe entstehen und dass die Rosacea tatsächlich eine Form der seborrhoischen Dermatitis ist. Dass das Nervensystem eine Rolle spielt, ist richtig, dass Magenstörungen etc. die Affektion verschlimmern können, ist auch richtig, aber die wirkliche Ursache von 19 unter 20 Fällen von Rosacea ist eine Seborrhoe des Kopfes, indem sie durch die beständige Reizung der Haut entsteht, welche die Folge der Verschleppung von Schuppen und Organismen (?) der Seborrhoe ist."

Wir sehen mithin, dass nirgends der *Willan*ismus gründlicher überwunden ist als in England, dem Vaterlande desselben. Es geht mit der Rosaceafrage genau wie mit dem Ekzem, wo auch in England der *Willan*'sche Ekzembegriff der bläschenförmigen Dermatitis artificialis obsolet geworden ist, während die jüngere französische Schule noch an ihm festhält und beispielsweise das seborrhoische Ekzem deshalb nicht als Ekzem anerkennt, weil es kein Bläschenstadium zeigt (*Brocq*).

Ich habe, ohne damals zu wissen, wie sehr ich dabei durch die Autorität der besten *älteren* Dermatologen unterstützt wurde, bereits vor 20 Jahren die These aufgestellt,[1] dass die meisten Fälle von Rosacea eine Krankheit sui generis seien und zwar *eine Form des seborrhoischen Ekzems.* Damit hatte ich das Gros der Rosaceafälle nicht bloss vollständig dem Bereiche der Akne (juvenilis) entzogen, sondern gleichzeitig einer anderen bekannten Reihe von Krankheitserscheinungen einverleibt. Es galt nun, diese neue Synthese durch klinische Untersuchungen zu begründen,[2] damit der Rosacea ein für allemal eine ihr natürliche Grundlage zu geben und sie aus der unnatürlich gewordenen Verbindung mit der Akne loszulösen. Wenn mir dieses trotz des historisch begreiflichen, aber allzu tief eingewurzelten Vorurteils allmählich gelungen ist, so verdanke ich dieses glückliche Resultat hauptsächlich dem Umstande, dass die bessere ätiologische Erkenntnis

[1] "Das seborrhoische Ekzem," *Monatshefte f. pr. Derm.*, Bd. VI., 1887.

[2] S. besonders die letzte Behandlung dieses Themas in Pathologie und Therapie des Ekzems. Wien, Hölder, 1903, pg. 199.

auch sofort eine *Umwälzung der Therapie der Rosacea* zur Folge hatte. Denn die so viel bespöttelte Nasenröte, von jeher eines der undankbarsten Gebiete dermatologischer Tätigkeit, wurde, sowie sie als ein "seborrhoisches Symptom" erkannt war, *ebenso leicht und radikal heilbar* wie die übrigen Erscheinungen des seborrhoischen Ekzems. Ich hatte daher alle Aerzte für meine *Anschauung* gewonnen, denen es ebenso leicht wie mir gelang, die Rosacea definitiv auf antiseborrhoische Art zu *heilen*.

Das Rosaceaproblem verlangt, wie jedes klinische Problem, das gewissenhafte Studium der *Krankheitsentwicklung* und daher vor allem der *frühesten Symptome*. Die Tatsache, dass der seborrhoische Ursprung der Rosacea erst so spät aufgefunden wurde, erklärt sich zum Teil aus dem Umstande, dass die Patienten meistens erst auf dem Höhestadium ärztliche Hülfe verlangen und selbst über die ersten Symptome keine Auskunft geben können. Dieser Mangel drückt sich bezeichnenderweise auch darin aus, dass die besten Autoren absichtlich keinen Entwicklungsgang der Rosacea zeichnen. *F. Hebra* betont, dass er keine Stadien, sondern nur verschiedene, häufig vorkommende "Bilder" der Erkrankung geben wolle, und nennt als solche vier: eine bläuliche Röte der Nasenspitze, ähnlich einer Erfrierung; sodann Röte mit Fettglanz und periodischer Steigerung nach der Mahlzeit; weiter gröbere Gefässerweiterungen und endlich gewöhnliche Talgdrüsenentzündungen, von denen übrigens nur die drei letzteren der seborrhoischen Rosacea angehören. *Kaposi* allerdings gab diese einsichtsvolle Beschränkung auf und construierte ad usum delphini[1] *drei Grade* der Erkrankung: (1) Rötung der Nasenspitze, (2) rote Knoten und Angiektasien, (3) Rhinophym. Aber in der französischen Uebersetzung von *Kaposi* bricht sich doch wieder die bessere Einsicht Bahn, und anmerkungsweise gibt *Besnier* wiederum der Ansicht Ausdruck, dass man keine Stadien, sondern nur verschiedene *Formen* der Rosacea unterscheiden könne und zwar: ein glattes Erythem, ein seborrhoisches Erythem, ein

[1] Vgl. hierzu die eigentümliche Umstellung der *Hebra*'schen Ekzemstadien durch *Kaposi* für seine Vorlesungen: *Unna*, Pathologie und Therapie des Ekzems. Hölder, Wien 1903, pg. 81.

tiefreichendes Erythem mit Papeln, die Teleangiektasien und das Rhinophym. In der Tat wächst das Krankheitsbild der Rosacea aus sehr verschiedenen einzelnen Elementen zusammen, die in ihrer Besonderheit nur im Anfange der Krankheit richtig erkannt werden. Man muss daher die Rosacea schon früher studieren als sie zum Arzte kommt. Dazu gehört, dass man fleissig die Gesichter von Gesunden studiert, und das kann man am besten dort, wo Menschen längere Zeit ruhig zusammen sitzen; allerdings sind Theater, Concerte und Gesellschaften nicht der rechte Ort, denn dort sind grade die Gesunden, auf die es ankommt, durch Puder und andere Behelfe in unnatürlicher Weise verschönt. Aber die Eisenbahnen, Pferdebahnen, elektrischen Bahnen, Omnibusse, etc. bieten dem aufmerksamen Beobachter eine interessante, nie versiegende Quelle der Belehrung. Hier findet man im Laufe der Zeit alle Anfangssymptome der Rosacea einzeln auf und erkennt schliesslich mit unfehlbarer Sicherheit die Candidaten einer späteren, ausgeprägten Rosacea aus allen übrigen Menschen heraus. Allerdings sind die ersten, unscheinbaren Symptome, die noch in die Breite sogenannter Gesundheit fallen, sehr vielgestaltig; aber es kehren doch gewisse Züge immer wieder. Unter diesen hebe ich einen als den ersten hervor, weil er nicht nur sehr charakteristisch, sondern auch bisher noch nirgends beschrieben ist, das ist die *Vergilbung der Haut* in der Umgebung von Nase und Mund. Mit diesem Namen habe ich eine eigentümliche Gelbfärbung der Haut bezeichnet, die ein Kennzeichen des seborrhoischen Ekzems ist.[1] Wo sie als frühes Zeichen beginnender Rosacea auftritt, befällt sie die Ober- und Unterlippen und schneidet nach aussen in scharfer Linie mit der Nasolabialfurche, nach unten mit der Kinnfurche ab. Die gelbliche Färbung dieser Hautpartie springt um so mehr in die Augen, weil die nächste Umgeben in starkem Contraste dazu eine rote Färbung aufweist, besonders die Höhe der Nasolabialfalten, häufig auch die Nase und das Kinn. Während die weitere Umgebung der Nase und Wangen in diesem Frühstadium zuweilen schon ein recht buntscheckiges Aussehen gewährt, fällt die

[1] *Unna*, Pathologie und Therapie des Ekzems. Hölder, Wien, 1903. pg. 175.

nächste Umgebung von Nase und Mund durch ihre matte, gelblich-bleiche Farbe und die Abwesenheit roter Flecken auf. In vielen Fällen bleibt diese lokale Anämie und Vergilbung der Lippen auch dann noch bestehen, wenn die Rosacea ihren Höhepunkt erreicht hat und fast das ganze übrige Gesicht einnimmt. Doch werden in anderen Fällen diese scharfen Grenzen mit dem Fortschreiten der Rosacea verwischt.

Ein zweites Frühsymptom, allerdings schon bekannt, aber doch nur sehr selten (so von *Besnier*) bei der Rosacea erwähnt, ist die *Pityriasis alba faciei*. Hierunter verstehen wir schilfernde Flecke von Linsen- bis Markstückgrösse, welche hauptsächlich die untere Wangengegend, aber auch Kinn, Nase und Stirn einnehmen. Hin und wieder konfluieren dieselben zu grösseren mattweissen oder grauen, schilfernden Flächen. Diese Form des seborrhoischen Ekzems kommt häufig ganz für sich allein vor, am meisten bei jugendlichen Personen, gruppenweise sogar in Familien und Schulen bei Kindern. Bildet sie mit anderen Erscheinungen den Anfang einer Rosacea, so tritt sie nicht so deutlich wie sonst in die Erscheinung, da die hier und da auftretenden roten Flecke die Aufmerksamkeit mehr auf sich ziehen und hin und wieder auch mit den schilfernden Flecken zusammenfallen, sodass dann rote, abschuppende Stellen entstehen. Die Patienten, meistens Frauen, die sich besser beobachten, wissen manchmal anzugeben, dass sie die blassen, schuppenden Stellen, die von ihnen für eine besondere Art "Sprödigkeit" gehalten wurden, schon lange vor dem Beginn der roten Flecke besassen.

Im Gegensatz zu diesen Symptomen geht die *ölige Seborrhoe* der Nase häufig der beginnenden Rosacea älterer Patienten männlichen Geschlechts voran. Die ölige Seborrhoe der Pubertät, insbesondere die der jungen Mädchen, verbindet sich im allgemeinen nicht mit der Rosacea, sondern mit Anämie der Nasenhaut und häufig auch mit der wahren Akne. Auch ist die Form der Rosacea, die bei bejahrten Männern zur Seborrhoe oleosa hinzutritt, nicht die gewöhnliche Form der roten Flecke, sondern besteht zunächst in einfachen Venenektasien und Netzen solcher, zu denen sich erst später einzelne erythematöse Flecke gesellen.

Wir kommen nun zu derjenigen Angiektasie, welche, wenn sie auch nur selten das erste Symptom darstellt, doch als das Hauptsymptom die Rosacea beherrscht. Erst durch das Hinzutreten dieser Gefässerweiterung werden die genannten Frühsymptome, die auch alle für sich bestehen können, zur seborrhoischen Rosacea. Die Wichtigkeit dieses Symptoms verlangt, dass wir uns gründlicher als es meistens bisher geschehen ist mit seinen Besonderheiten, seiner anatomischen und physiologischen Grundlage beschäftigen. Das Typische dieser Gefässerweiterung der Haut liegt bekanntlich in der Lokalisation, in ihrer Beschränkung auf die mittlere Partie des Gesichtes, die Nase, Wangen und nächstbelegenen Bezirke von Kinn und Stirn. Diese sind aber bekanntlich auch diejenigen Stellen der Haut, welche bei der weissen Rasse zu einer physiologischen Hyperämie prädisponiert sind. Je kühler das Klima und je pigmentloser die Gesichtshaut, um so reiner tritt diese, "normale Angioparese" der Gesichtshaut in die Erscheinung derart, dass ein zartes Rot der mittleren Wangenpartie uns nicht nur normal, sondern der Mangel eines solchen unschön erscheint. Trotzdem müssen wir auch diese "normale Röte" als eine allerdings leichte Gefässparese bezeichnen und auf das Konto des kühlen Klimas setzen. Denn der ebenso weisse, pigmentlose Europäer zeigt in südlichen, wärmeren Teilen Europas dieses Incarnat weniger oder garnicht. Diese Rötung der hervortretenden Teile des Gesichtes bildet die natürliche Reaktion auf den vorangehenden Kältereiz, der zunächst zwar eine Kontraktion der Arterien bewirkt, auf welche aber noch während der Fortdauer des Kältereizes der für die Haut wohltätige Umschlag in eine Wallungshyperämie folgt. Trifft dieser Umschlag zeitlich zusammen mit dem Ersatz der äusseren Kälte durch Wärme, wie z. B. beim Eintritt in ein geheiztes Zimmer aus der winterlichen Kälte, so nimmt die Parese der Hautgefässe einen sehr hohen Grad an—das Gesicht glüht. Dieser allbekannte Vorgang bildet das physiologische Vorbild für die stets pathologische Erscheinung der Rosacea, wie er denn auch wesentlich verschlimmernd in den Process dieser Krankheit eingreift. D[illegible] Mangel starker Kältereize im südlichen

ebenso notwendig als Reaktion einen dauernden starken Tonus der Hautgefässe, eine habituelle Blässe herbei. *Hardy* hatte also vollkommen recht, wenn er zum ersten Male darauf hinwies, dass die Rosacea eine Krankheit der kalten Länder, besonders Englands und Russlands sei, und wir verstehen auch, dass uns weder Griechen und Römer noch Araber Schilderungen der Rosacea hinterlassen haben, dass diese Affektion aber wohl im Mittelalter bekannt wurde, als die medizinische Wissenschaft an die nördlichen Völker Europas überging. Die Kälte mit ihrer Folge der sekundären Gefässparese ist aber stets nur eine accidentelle Ursache der seborrhoischen, eigentlichen Rosacea. Wir werden hierauf noch bei der Differentialdiagnose zwischen der Rosacea und dem Frost (Perniosis) der Nase zurückkommen, welchen viele Autoren auch Rosacea (Couperose) genannt haben, und bei welchem die Kälte den hauptsächlichen, den zureichenden Grund abgibt.

Wir können mithin die eigentümliche Lokalisation der Rosacea durch diese der Gesichtshaut eigene Neigung zur Gefässparese, zur Blutwallung erklären, welche zunächst durch äussere Temperaturschwankungen erworben und dann in den Dienst vieler anderen, inneren Nervenreize gestellt wurde. Hiermit sind aber noch nicht alle Eigentümlichkeiten dieser Angiektasie erschöpft. Denn eine Parese der Hautarterien erklärt durch die mit Sicherheit folgende Blutüberfüllung des oberflächlichen Kapillarnetzes wohl die diffuse Röte der Nase und Wangen, aber noch nicht die ebenfalls für die Rosacea so charakteristischen und noch viel auffallenderen Erweiterungen und Schlängelungen der Hautvenen. Ganz unerklärlich aber erscheinen auf den ersten Blick diese varikösen Venennetze dort, wo garnicht einmal eine starke diffuse Hautröte konkurriert, die Kapillaren mithin wenig oder garnicht erweitert sind, wie so oft bei der Rosacea der älteren Herren. Für diese Erscheinungen genügt offenbar das einfache Schema der Gefässparese nicht, und wir müssen uns nach lokalen Besonderheiten in der Anlage der Hautgefässe umsehen. Diese kennen wir allerdings genauer nur für die Nasenhaut; die Beschreibung von *Luschka* stimmt mit den ausgezeichnet guten Abbildungen

in dem vortrefflichen alten Atlas von *Friedrich Arnold* gut überein. Bekanntlich entbehrt die Nasenhaut fast vollständig des subkutanen Fettgewebes, ist auf dem Nasenflügel und der Nasenspitze fest mit der teils knorpligen, teils fibrösen Unterlage verwachsen und nur auf dem oberen und seitlichen Teil der Nase verschieblich. Die Arterien strömen reichlich von allen Seiten (von der Maxillaris externa und interna und Ophthalmica) zu und bilden zwischen Haut und Muskulatur, also dort, wo sonst der Panniculus sich befindet, ein grobes, ziemlich dichtes Netz. Dieses entspricht dem an der Cutis-Subcutisgrenze sich ausbreitenden Netz anderer Hautstellen (z. B. der Vola manus), ist aber viel reicher ausgebildet. Aus diesem tiefen arteriellen Netz erheben sich die kapillaren Gefässe der Nasenhaut und bilden ein zweites, feineres Netz unterhalb der Oberhaut. Insoweit gleicht das Schema der Gefässe der Nasenhaut dem gewöhnlichen Schema der Hautgefässe. Nun kommt aber eine Besonderheit, welche wohl mit der straffen Anheftung der Nasencutis an die Unterlage zusammenhängt. Normalerweise nämlich nehmen die Venen denselben Weg zurück, den die Arterien genommen haben, und entwickeln sich aus demselben oberflächlichen Kapillarnetz, indem die grösseren venösen Kapillaren sich den cutanen und subcutanen Arterien anschliessen, sodass die grossen Hautvenen wieder ebenso tief gelagert sind wie die Arterien desselben Kalibers. An der Nasenhaut weichen aber die grösseren Venen nach aussen ab; sie sind auf derselben Höhe wie das Kapillarnetz in die Cutis eingebettet, bilden zwischen den Kapillaren ein sehr weitmaschiges Netz und liefern ihr Blut auf oberflächlichem Wege in die Facialis anterior und die Coronaria lab. sup. Man kann also den Blutverlauf kurz so beschreiben, dass die Nasenhaut ihr Blut durch ein dichtes Netz von unten empfängt und es nach Auflösung der Arterien in ein Kapillarnetz durch ein weites Venennetz nach aussen wieder abgibt. Diese seltsam hochgelagerten groben Venen erkennt man schon bei manchen Gesunden bei stärkerer Blutfülle an den Nasenflügeln, wo sie in parallelem Verlaufe den Knorpel des Nasenflügels queren; auch sieht man sie sehr deutlich auf dem Bild der Nasenvenen von *Arnold*. Sie sind es, die bei der eben

erwähnten beginnenden Rosacea älterer Herren manchmal allein erweitert sind und welche bei jeder Heilung einer gewöhnlichen länger bestehenden, diffus roten Rosacea zuletzt übrig bleiben und einzeln entfernt werden müssen.

Aus dieser Schilderung sieht man deutlich, dass die gewöhnliche Darstellung, als seien die Teleangiektasien und die diffuse Wallungshyperämie getrennt für sich bestehende Symptome der Rosacea, nicht haltbar ist. Sowohl die diffuse Hyperämie des oberflächlichen Kapillarnetzes wie die Ektasie der im selben Niveau liegenden grossen Venen sind gleichwertige Folgen einer für gewöhnlich nicht zu Tage tretenden Parese des tiefen arteriellen Gefässnetzes. Gewöhnlich erweitern sich beide Teile des abführenden Gefässsystems gleichzeitig. Bleibt aus irgend welchen Gründen—und wir werden solche kennen lernen—die oberflächliche Kapillarhyperämie aus, so treten allein die verbreiterten oder auch verlängerten und dann geschlängelten grossen Venen in die Erscheinung. Daraus ist dann aber keineswegs auf eine primäre Gefässhypertrophie zu schliessen, wie sie *Auspitz* einen Gedankengang des älteren *Hebra* fortsetzend, angenommen hat. Es entwickelt sich einfach unter unseren Augen ein Vorgang an der Oberfläche der Haut, der uns sonst durch seine subkutane Lage entgeht und der als eine dauernde Parese des Arteriennetzes mit ihren Folgen zu definieren ist.

Leider fehlt uns eine entsprechende Klarheit über die Gefässversorgung der mittleren Wangenpartie. Wir wissen nicht ob die auch hier so häufig auftretenden und auffallenden Venenektasien, Venennetze und Venensterne ebenfalls wie in der Nasenhaut einer abnormen Hochlagerung der Venen innerhalb der Cutis ihr Dasein verdanken. Es wäre verdienstlich, durch Injectionspräparate der Wangenhaut, insbesondere bei älteren Leuten, diese Frage zu beantworten.

Sind nun die besprochenen Kapillar- und Venenektasien der Gesichtshaut die blosse Folge periodischer, immer wiederkehrender Hyperämien der Gesichtshaut? Können einfache Blutwallungen zum Kopfe allmählich das Gesamtbild der Rosacea zur Folge haben? *Durchaus nicht.* Da liegt eben der alte und allgemeine Fehler, der sich durch die ätiologischen Erörterungen der meisten Lehrbücher hindurchzieht. Man

beschuldigte alle möglichen inneren, lokalen und konstitutionellen Leiden, dass sie auf dem Wege des Nervenreflexes Blutwallungen zum Kopfe hervorriefen und glaubte damit schon eine Basis zum Verständnisse der Rosacea gefunden zu haben, übersah aber vollkommen, dass es viele Menschen gibt, die an habituellen Congestionen des Kopfes leiden, ohne auch nur den Beginn einer Rosacea zu zeigen. Nur diejenigen unter ihnen erwerben mit der Zeit eine Rosacea, welche bereits vorher gereizte, erkrankte Partien der Gesichtshaut besassen. Und in solchen Fällen ist es dann allerdings augenscheinlich, dass sowohl die Ausbreitung wie die Stärke der Hautaffektion unter dem Einflusse der periodisch wiederkehrenden Blutwallungen rascher und bedeutender zunimmt als sie es ohne diesen befördernden Umstand tun würden. Auch tragen periodische Wallungen dazu bei, dass die ursprünglich zerstreuten Herde der Erkrankung allmählich zu einer gleichmässigen, diffusen Röte konfluieren, aber notwendig sind sie in keinem Falle.

*Die im Anfang beobachtete Rosacea tritt stets fleckweise auf*, und es ist durchaus nicht immer die Nasenspitze, wie manche Autoren angeben, die zuerst befallen wird. Von den so charakteristischen Rötungen der Wangen, welche streifenförmig die vergilbten Nasolabialfalten umgeben, ist schon die Rede gewesen. Häufiger treten aber zerstreut an den Wangen, der Nase und Stirn, um den Mund herum linsengrosse und grössere Flecke von frisch roter Farbe auf. Diese vergehen oft, um bald darauf an derselben Stelle oder anderen Orten wieder zu erscheinen. Sie verursachen nur eine leichte brennende oder juckende Empfindung; oft fehlt dieselbe ganz. Untersucht man die Flecke genauer, so findet man im Centrum oft einen dunkler geröteten Punkt, oder eine follikuläre Erhebung, ja hin und wieder eine kleine Papel mit gelblichem Kopf. Allmählich fassen die Flecke festen Fuss, benachbarte konfluieren zu grösseren roten Flächen; man findet jetzt z. B. eine diffuse Röte um beide Nasenlöcher, an der Nasenwurzel, auf einer oder beiden Backen, daneben aber noch mehrere vereinzelte rote Flecke. Die zwischen diesen zerstreuten Herden liegende Haut ist nicht normal, sondern streckenweise schuppig und vergilbt, besonders bei jüngeren

Leuten, fettig und vergilbt öfter bei älteren. Dazwischen treten Venenektasien auf und mehren sich mit dem Alter. Sie zeichnen meist die diffus geröteten Stellen aus und verleihen denselben ein noch dunkleres Colorit, aber sie erscheinen auch auf blassgelber Haut, wie schon oben bemerkt. Es handelt sich dann gewöhnlich um solche Hautstellen, welche durch Talgdrüsensekret stark eingefettet sind und wo wegen einer gleichzeitigen Hypertrophie der Talgdrüsen das erweiterte Kapillarnetz in ein tieferes Hautniveau zu liegen kommt, womit die diffuse Röte der Oberfläche verschwindet. Daher charakterisieren die Venennetze auf gelblicher, fettiger Haut gewöhnlich ältere Leute männlichen Geschlechts.

Aus dieser Beschreibung ist ersichtlich, dass der alte, aus dem Mittelalter herrührende Name *Gutta rosea*, rosenfarbener Tropfen, eigentlich sehr bezeichnend war. Das *Fleckige*, das *Bunte* ist für den der Rosacea anheimfallenden Teint das Charakteristische. Die *einförmige Röte* ist erst ein sekundäres Phänomen, welches nur diejenigen Fälle von Rosacea aufweisen, welche viel an aufsteigender Hitze, an Wallungen zum Kopfe leiden, oder bei denen eine verkehrte äusserliche Behandlung eine universelle Gesichtsröte zuwege gebracht hat.

Wesentlich verstärkt wird die bunte Beschaffenheit der Haut nun noch weiter durch das Auftreten jener *Follikulitiden*, über deren verschiedene Deutung ich im historischen Teile gesprochen habe. Auch die Follikulitiden können ein primäres Symptom sein, an welches sich erst später die Gesichtsröte anschliesst, meistens aber finden wir sie erst im Verlaufe der Rosacea und in jedem Falle in verschiedener Stärke und Menge. Es gibt Rosaceafälle, welche auch bei jahrzehntelangem Verlaufe keine follikulären Entzündungen aufweisen und daher auch nie die geringste Handhabe bieten, etwas "Akneartiges" anzunehmen. Aber die meisten Fälle zeigen schon früh, manche vom Beginne an Papeln und Pusteln. Gewöhnlich bilden dieselben das Centrum roter Flecke, können aber auch isoliert vorkommen. *Im Gegensatz zu den Papeln und Pusteln der* (echten juvenilen) *Akne haben diejenigen der Rosacea vier charakteristische Eigenschaften,*

welche sie bei aufmerksamer Beobachtung stets sicher erkennen lassen: (1) den Mangel an Comedonen, (2) den oberflächlichen Sitz, (3) den häufigen und raschen Wechsel der Erscheinung und (4) die relative Schmerzlosigkeit. Zu diesen Eigenschaften der einzelnen Follikulitiden kommt noch für das Gesamtbild (5) die Verschiedenheit der Verteilung der Efflorescenzen über das Gesicht bei beiden Affektionen.

Der fundamentalste Unterschied zwischen einer Pustel der Rosacea und einer Aknepustel besteht darin, dass die letztere sich auf der Struktur eines Komedos aufbaut, die erstere nicht. Einer Acne pustulosa ist stets eine Acne punctata vorausgegangen, die lediglich durch die Komedonen und eine allgemeine Hyperkeratose der Oberfläche charakterisiert ist. Freilich muss man in Bezug auf den Komedo alle laxen Bezeichnungen vermeiden und scharf definieren. Ein Komedo ist ein projektilartiges, im Innern segmentiertes Hornkörperchen mit einem Inhalt von Fett und Aknebazillen, welches nach unten entweder offen oder auch durch Hornschicht geschlossen ist. Es ist erzeugt durch eine Hyperkeratose des Ausführungsganges einer Talgdrüse oder eines Haarbalges und pathognomonisch für die Akne. Nicht mit Komedonen zu verwechseln—was leider häufig geschieht—sind die schwarzen Punkte, welche die Ausführungsgänge offener, talgerfüllter, erweiterter Talgdrüsen markieren und beim Ausdrücken den dunkeln Kopf einer einfachen Talgmasse darstellen; wir nennen sie die *Punktation der Talgdrüsen*. Da wir im hornigen Komedo ein sehr scharf definierbares Naturprodukt vor uns haben, kann es immer nur zur Konfusion führen, wenn wir eine beliebig in Wurmform ausdrückbare Talgmasse mit demselben Namen benennen, auch wenn der Kopf dunkel gefärbt ist. *So konstant der Komedo bei der Akne als Kern der Affektion zu finden ist, so konstant fehlt er bei der Rosacea*, wenn auch eine Punktation besonders auf der Nase b[illegible]tzteren hin und wieder vorkommt.

Die P[illegible]usteln der Rosacea ergeben also beim Aus-[illegible]donen. Es lässt sich auch aus den Pusteln [illegible]xsudat gewinnen, da dieselben nie so gross [illegible]chen wie die Aknepusteln. Die meisten [illegible] bilden sich überhaupt nicht in Pusteln um

und können die Dimensionen einer Erbse oder Linse erreichen, ohne etwas Anderes darzustellen als trockne, rote, indolente Protuberanzen. Niemals schliesst sich ferner an die Pusteln der Rosacea eine so tiefgehende Infiltration und weitgehende eitrige Zerstörung der Cutis an wie bei Aknepusteln, weshalb auch die narbigen Verunstaltungen der Akne selbst bei langjährigem Bestande der Rosacea stets fehlen. Dagegen haben die Papeln der Rosacea die Neigung, sich rascher in der Fläche auszubreiten und stärker über die Oberfläche zu erheben. Häufig heilen die Papeln und Pusteln nach kurzem Bestande von selbst ab, um allerdings ebenso häufig an derselben Stelle oder daneben wieder aufzutreten. Ein so hartnäckiges, *monatelanges Verbleiben* der Effloreszenzen an derselben Stelle wie bei gleich grossen Aknepusteln kommt bei der Rosacea nicht vor oder ist wenigstens sehr selten. Durch diesen oberflächlichen Sitz, die raschere Abwandlung der Einzeleffloreszenzen und ihren häufigen Ortswechsel wird das Gesamtbild der pustulösen Rosacea ein viel flüchtigeres und wechselnderes als das der pustulösen Akne. Durch die oberflächlichere Lage, die geringere Eiterung und die mangelnde Zerstörung der Cutis erklärt sich auch von selbst die geringere, oft ganz fehlende Schmerzhaftigkeit der pustulösen Rosacea. An subjektiven Empfindungen wird höchstens über geringes Brennen und Jucken geklagt.

Aus allen diesen klinischen Daten muss man für die betreffenden parasitären Keime beider Affektionen den Schluss ziehen, dass die der Rosacea nicht so tief in die Follikel eindringen, die Leukocyten weniger stark anlocken, selbst rascher proliferieren und rascher an Ort und Stelle wieder absterben als die der Akne.

Zu den genannten Verschiedenheiten zwischen den Follikulitiden der Rosacea und denen der Akne kommt nun schliesslich noch die ganz verschiedene regionäre Verbreitung beider Affektionen. Schon *Rayer* machte darauf aufmerksam, dass die "Couperose" auf das Gesicht beschränkt sei, während die Akne auch den Rücken befällt. Jetzt ist es allgemein bekannt, dass ausser diesen Regionen auch die obere Partie der Brusthaut mit Vorliebe von der Akne befallen wird, ja, dass in manchen Fällen der ganze Rumpf und die oberen

Partien der Oberarme ergriffen werden. Im Gesicht selbst treffen aber die Prädilektionsstellen auch nur teilweise auf Nase und Wangen zusammen. Die Stirnhaargrenze und die seitlichen Teile der Wangen, welche die Akne mit Vorliebe einnimmt, werden von der Rosacea gewöhnlich frei gelassen. Letztere befällt häufig die Nasenspitze, die Akne die Concavität der Ohrmuschel, nicht auch umgekehrt. *I. Neumann* machte zuerst mit Recht darauf aufmerksam, dass die Rosacea auch die Glatzen befällt. In der Tat ist es ein sehr charakteristisches Bild, welches die Rosacea älterer Männer liefert, indem die fleckige Röte des Antlitzes sich über die Stirn bis auf die Mitte des kahlen Scheitels hinaufzieht. Niemals geht die Akne so weit über die Stirnhaargrenze aufwärts.

Aus den besprochenen sechs Elementen der Pityriasis alba, der Vergilbung, der Kapillarerweiterungen und Varicen, der Papeln und Pusteln setzen sich nun in allerverschiedenster Weise die bunten Bilder der Rosacea zusammen. Im allgemeinen wiegen die erstgenannten Symptome im Anfange, die letztgenannten später vor. Doch gibt es Fälle, die zeitlebens nur wenige rote Flecke aufweisen. Die sich gewöhnlich mit den Jahren mehr und mehr ausbreitende Kapillarektasie macht aber das Aussehen der Patienten schliesslich wieder gleichförmiger. Dass man keine festen Formen oder Grade der Erkrankung aufstellen kann, ergibt sich hieraus von selbst.

Ein glücklicherweise seltener Ausgang der Rosacea ist der in *Rhinophym.* Hierunter verstehen wir bekanntlich eine lappige, unförmliche Hypertrophie der Haut der Nase und der angrenzenden Wangenhaut. Ich gehe auf dieselbe nicht ausführlich ein, da ich sie erst vor kurzer Zeit in einer besonderen Arbeit behandelt habe.[1] Hier will ich nur daran erinnern, dass, wie *F. Hebra* zuerst bemerkte, nur Männer vom Rhinophym befallen werden und diese erst nach dem 40sten Lebensjahre. Dieser Umstand hängt damit zusammen dass nur bei Personen männlichen Geschlechts schon physiologisch eine Hypertrophie der Talgdrüsen in höherem Alter vorkommt, die eine gelbliche, gedunsene, fettige, mit erweiterten Ausführungsgängen der Talgdrüsen besetzte und von

[1] Unna, ("Rhinophym.") *Deutsche Med.-Zeitung*, 1904, No. 25.

varikösen Venen durchzogene Nasenhaut zur Folge hat. Leiden dieselben Individuen ausserdem noch an Rosacea, so entwickelt sich im Laufe der Jahre das monströse Bild der "Pfundnase" (des Rhinophyms). *Hebra* wurde wahrscheinlich durch diesen Ausgang in Rhinophym in seiner Ansicht bestärkt, dass die Rosacea von Anfang an eine Hypertrophie der Haut sei, zuerst der Gefässe, später der Gesamthaut, während die Akne zu den Entzündungen der Haut gehöre. Ich kann diese Ansicht nicht teilen. Ich trenne die Akne noch viel entschiedener von der Rosacea als *F. Hebra*, aber ich betrachte die letztere doch ebenfalls als eine Entzündung der Haut und zwar als eine besondere, durch Gefässerweiterung ausgezeichnete Form des seborrhoischen Ekzems. Das Rhinophym, eine zu den Granulomen gehörige, durch ein prächtiges Plasmom gekennzeichnete, entzündliche Geschwulst ist ein *atypischer*, nur auf besonders vorbereitetem Boden entstehender Ausgang der Rosacea; das ergibt sich schon allein aus dem Umstande, dass es nie bei Frauen vorkommt.

Noch in einem anderen Punkte, der klinisch von nicht geringer Bedeutung ist, muss ich *F. Hebra* widersprechen. Für ihn ist die Rosacea eine Erkrankung entweder der Pubertät oder des Klimakteriums, wie er denn mit besonderer Vorliebe die Beziehungen derselben zu dem Genitalsystem der Frauen erörtert. Schon *Hardy* hat mit Recht demgegenüber betont, dass die Rosacea nicht erst mit der Menopause, sondern gewöhnlich viel früher auftritt. Die ersten Anfänge der Rosacea beobachtet man vom 25ten Jahre aufwärts, selten früher, jedoch meistens etwas später, zwischen dem 30sten und 40sten Jahre. Wenn das Klimakterium überhaupt einen bestimmenden Einfluss besitzt, so möchte ich es am ehesten noch für jene Fälle vermuten, wo bei älteren Damen hartnäkig recidivierende, knötchenförmige Papeln nur am Mund und Kinn vorhanden sind. Auch durch diese Zeitbestimmungen tritt die Rosacea in den schroffsten Gegensatz zur Akne, welche den Zeitraum vom 15ten[1] bis zum 25sten Jahre beherrscht und in allen nicht allzu schweren Fällen dann von selbst vergeht. Wenn die Zeit der Akne vorüber ist, fängt die der Rosacea erst an.

[1] Bei Mädchen schon vom 13ten Jahre an.

Nur selten leiden dieselben Personen an beiden Affektionen zugleich. Wenn dieses aber einmal der Fall ist—nämlich in der Mitte der zwanziger Jahre—nur dann hat man Gelegenheit, beide Diagnosen Rosacea und Akne am selben Patienten zu machen; man sieht noch einzelne, wenige Komedonen und Aknepusteln neben den Anfangssymptomen der Rosacea. Erstere schwinden im selben Masse, wie die letzteren sich entwickeln.

Zu dieser Reihe der Rosacea selbst angehörender Symptome treten nun in den meisten Fällen noch gewisse anderweitige Merkmale, die von ebenso grossem diagnostischen wie therapeutischen Interesse sind und welche meine These beweisen, dass die Rosacea nur ein Glied in der Kette der Erscheinungen des seborrhoischen Ekzems darstellt. Diese Symptome bestehen entweder gleichzeitig mit der Rosacea oder sie sind nur auf anamnestischem Wege festzustellen. Zu den ersteren rechne ich vor allem die Blepharitis ciliaris, das Ekzema seborrhoicum papulatum des Gesichtes und Halses und des übrigen Körpers und die seborrhoische Alopecie. Die Blepharitis ciliaris begleitet die Rosacea sehr häufig und geht ihr, da sie meistens schon in der Kindheit besteht, gewöhnlich voran. Sie ist dann oft der letzte bleibende Rest eines in frühestem Kindesalter überstandenen Kopf- und Gesichtsekzems und bildet selbst wieder eine ekzematöse Etappe, die zur Rosacea im mittleren Lebensalter hinüberleitet. Die Patienten sind dann meistens so an ihr Leiden und die sich daran anschliessenden Conjunctivalkatarrhe gewöhnt, dass, wenn man sie auf den Zusammenhang mit der Rosacea aufmerksam macht und den Wunsch ausspricht, gleichzeitig das Ekzem der Augenlidränder—denn das ist die Blepharitis ciliaris—zu heilen, sie ausweichend bemerken, das tue nicht nötig, dafür wäre bereits alles ohne radikalen Erfolg versucht. Wenn durch den Reiz der Blepharitis und Conjunctivitis permanent eine starke Thränensekretion erzeugt wird, so gesellt sich zu der Combination von Blepharitis und Rosacea noch eine Rhinitis und unter Umständen ein rhagadiformes und krustöses Ekzem des Naseneinganges und bei Männern eventuell noch ein subnasales Ekzema pilare, eine sogenannte subnasale Sykosis. Dieses

ist der wahre und nach meiner Ueberzeugung einzige Zusammenhang der Rosacea mit Nasenleiden; es ist die folgerechte Sequenz einer Blepharitis, Conjunctivitis und Rhinitis ekzematösen Ursprungs. Dagegen habe ich mich von dem Zusammenhang anderer Affektionen der Nasenschleimhaut mit der Rosacea, wie er von verschiedenen Autoren (*Seiler*, *Sticker*, *Bergh*, *Brocq*) angenommen wird, nicht überzeugen können und halte in keinem Falle die Rosacea für die Folge solcher Nasenleiden. Ein nicht geringer Teil meiner Rosacea Patienten der letzten Jahre war ohne jeden Erfolg vorher rhinologisch behandelt worden, während die antiseborrhoische Therapie sofort Heilung brachte.

Seltener als die Blepharitis, aber doch häufiger als man im allgemeinen annimmt, finden wir die Komplikation der Rosacea mit einem rotschuppigen Ausschlag, der in evidenter Weise von einem schuppigen oder fettig-krustösen Ekzem des behaarten Kopfes seinen Ausgang nimmt und von hier aus gewöhnlich einerseits den Nacken befällt und in der Mittellinie des Rückens herabsteigt, andererseits die Stirn, die Seitenteile des Gesichtes und den Hals einnimmt und von hier auf die mittleren Teile der Brusthaut übergeht. Es ist dies ein typisches Ekzema seborrhoicum papulatum. Wo dasselbe an die Rosacea im Bereich des Mittelgesichtes angrenzt, konstatiert man einen so allmählichen Uebergang in die rotschuppigen Flecke der Rosacea, dass man zunächst an der Diagnose Rosacea überhaupt irre wird. Erst die genauere Betrachtung der letzteren und die Anamnese, welche den vorherigen Bestand der Rosacea ergibt, zeigt uns, dass der Fall als der akute Ausbruch eines chronischen, seborrhoischen Ekzems zu deuten ist, dessen Manifestationen ausser in latenten Herden des behaarten Kopfes in der Rosacea bereits seit langer Zeit bestanden.

Noch seltener, aber den ekzematösen Ursprung der Rosacea vielleicht noch eindringlicher vorführend, ist die Komplikation eines nässenden, krustösen Ekzems der Seitenteile des Gesichtes und des Halses mit der Rosacea des Mittelgesichtes—wenigstens für die Anhänger der älteren Schule, welche für die Diagnose Ekzem: Bläschen und Nässen verlangen. Auch hier gehen die nässenden Partien, welche

meistens die Ohren umgeben, ganz allmählich und unmerklich über in die rotschuppigen Elemente der Rosacea, und im übrigen ist der gesamte Verlauf, die Präexistenz alter seborrhoischer Herde des behaarten Kopfes einerseits, der Rosacea anderseits und das akute Hinzutreten der manifesten, ekzematösen Proruptionen, genau derselbe wie im Falle des Ekzema seborrhoicum papulatum. An solche Fälle dachte *Besnier* wohl, als er bei Besprechung der "Acné rosacée" betonte, dass Fälle vorkämen, wo es schwer zu entscheiden wäre, ob es sich um ein "eczéma acnéique" oder eine "acné eczématique" handle.

Eine sehr häufige und schon von anderen Autoren (*I. Neumann*) hervorgehobene Komplikation ist die mit seborrhoischer Alopecie. Aeltere Herren mit Rosacea pflegen in der übergrossen Mehrzahl der Fälle eine Glatze zu haben und wissen meistens auch sehr wohl, dass diese selten von rotschuppigen Flecken frei ist. Wie schon oben bemerkt, setzt sich häufig die Rosacea als breiter roter Streifen auf den kahlen Scheitel fort, was bei der früher angenommenen reflektorisch-vasomotorischen Aetiologie der Rosacea unbegreiflich war, dagegen bei der gemeinschaftlichen seborrhoischen Ursache der Alopecie und Rosacea sehr verständlich ist. Die seborrhoische Alopecie kann aber auch die Rosacea komplizieren, ohne grade zu völliger Kahlheit zu führen. Dieses ist besonders bei Frauen der Fall. Ein stärkerer Haarausfall kompliciert in der Tat viele Fälle von Rosacea der Frauen, und es ist therapeutisch von Wichtigkeit, in jedem Falle danach und nach sonstigen seborrhoischen Symptomen der Kopfhaut zu forschen.

Ich kann die hiermit gegebene Darstellung der klinischen Erscheinungen der Rosacea nicht verlassen, ohne noch zweier Affektionen zu gedenken, welche mit der seborrhoischen Rosacea verwechselt werden können und es in der Tat hin und wieder werden. Dieses sind: *der Frost der Nase* und das *Ulerythema centrifugum* (Lupus erythematosus).

Diese Rötung der Nase durch Frost (Perniosis) ist eine sehr seltene Affektion im Vergleich mit der seborrhoischen Rosacea, wenigstens in meinem Beobachtungskreise. Sie wird in den nördlichen Gegenden Europas wohl häufiger

und in ausgedehnterer Form vorkommen; wenigstens habe ich erst einmal bei einer Schwedin und einmal bei einer Russin die Affektion sich auf die Wangen ausdehnen sehen. Sie befällt mit besonderer Vorliebe das weibliche Geschlecht und stellt sich meistens bereits in jugendlicherem Alter ein als die Rosacea, die das mittlere Lebensalter bevorzugt. Das Aussehen des Frostes der Nase ist von vornherein ein viel gleichmässigeres als das der Rosacea und unterliegt auch keinem Wechsel in der Zeit. Die Röte setzt sich nicht aus getrennten Flecken zusammen, sondern befällt, von der Nasenspitze anfangend, einen mehr oder minder grossen Teil der Nase mit gleichförmiger Röte. Häufig ist nur die Nasenspitze allein ergriffen, ein Zustand, der von einigen Autoren mit Unrecht als gewöhnlicher Beginn der Rosacea hingestellt ist. Die Grenze der Röte ist scharf abgeschnitten und geht nicht, wie bei der Rosacea, verwaschen in die Umgebung über; auch zeigt diese keine seborrhoischen Symptome, keine Vergilbung, keine schuppigen Flecke; die von Frost befallene Hautpartie ist gewöhnlich von einem reinen und zarten Teint der übrigen Gesichtshaut umgeben. Dagegen ergibt die weitere Inspektion in den meisten Fällen an den anderen Prädilektionsorten (Finger, Zehen, Ohren) die bekannten Erscheinungen des Frostes in mehr oder minder starker Ausprägung; nur selten befällt der Frost die Nase allein. Die Farbe der geröteten Partie ist auch nicht dieselbe wie bei der frisch gelbroten Rosacea, sie ist bläulichrot, bei einwirkender Kälte sogar blaurot; wie immer, wird auch hier die blaue Nuance durch Kontraktion der oberflächlichen Kapillaren hervorgebracht, indem die tiefliegenden, blutüberfüllten Kapillaren dann durch eine weissliche Schicht hindurchschimmern. Die Oberfläche ist glatt, oft sogar glänzend durch eine leichte Anschwellung der Cutis, nicht durch fettiges Sekret, während sie bei der Rosacea matt, sogar schuppig, oder auch fettglänzend erscheint. Die Ektasien der gröberen Venen, welche bei der Rosacea eine solche Rolle spielen, fehlen beim Froste oder kommen innerhalb der Kapillarektasie nicht zur Geltung. Fraglos wirken alle gefässlähmenden Einflüsse innerer oder äusserer Art, welche die Rosacea verstärken, auch auf den Frost der Nase

verschlimmernd ein; unter diesen nimmt aber die Kälte den weitaus bedeutendensten Rang ein, sie ist gradezu der spezifische Reiz für diese Art der Gefässparese, während z. B. mechanische Reibung, die unter allen Umständen die Rosacea verschlimmert, beim Frost bis zu einem gewissen Grade wohltätig wirken kann. Wenn wir den Frost der Nase mit den bekannteren Lokalisationen des Frostes an Händen und Füssen vergleichen, so entspricht derselbe stets nur dem schwächeren Grade allgemeiner, gleichmässiger Stauung; Frostbeulen, d. h. umschriebene, heftig juckende Oedeme um eine kleine centrale, diapedetische Blutung, sind mir bisher an der Nase nicht begegnet.

Ueberblickt man die sämtlichen Symptome und den ganzen Verlauf des Frostes einerseits und der Rosacea andererseits, so erscheinen sie als ganz verschiedene Erkrankungen der Haut, die nur durch die Lokalisation und den labilen Gefässtonus der Gesichtshaut in geringem Grade verähnlicht werden. Da das angioneurotische Element beim Frost in den Vordergrund tritt, hat man diesen—und ich selbst früher auch—als angioneurotische Rosacea von der seborrhoischen zu scheiden gesucht; aber ich halte es für viel besser und die Verhältnisse klärender, wenn man den einmal eingeführten, guten Namen: *Frost*, *Perniosis*, für diese Form des Erythems reserviert und Rosacea nur die seborrhoische, durch Angiektasie ausgezeichnete Entzündungsform des Gesichtes nennt.

Die Differentialdiagnose der (seborrhoischen) Rosacea vom Ulerythema centrifugum (sog. Lupus erythematosus) wird von manchen Autoren, z. B. *Lesser*, für eine stets leichte gehalten. In der Tat ist es auch hier eigentlich nur die Lokalisation auf Nase und Wangen (in Schmetterlingsform) und die Entzündungsröte, welche beide sonst grundverschiedene Affektionen ähnlich macht; immerhin kommen bei schwacher Ausprägung der Symptome des Ulerythems oder stärkerer der Rosacea Verwechslungen tatsächlich vor, sodass ich eine kurze Zusammenfassung der hauptsächlichsten Differenzpunkte nicht für überflüssig erachte. Was zunächst die Lokalisation betrifft, so ergreift das Ulerythem ausser dem Gesicht häufig auch den behaarten Kopf,

die Ohren und die Hände und zwar in einer Form, die den Gedanken an Rosacea ausschliesst. Der rasche Wandel der Röte unter dem Einflusse innerer und äusserer Reize, die charakteristischen Venenektasien, die Papeln und Pusteln und die begleitenden seborrhoischen Phänomene welche die Rosacea charakterisieren, fehlen dem Ulerythem. Anderseits findet sich bei letzterem ein erhabener, serpiginös fortschreitender und dabei die angioparetische Region des Mittelgesichtes auch ohne weiteres überschreitender Rand, während die centrale Partie nach längerem Bestande stets atrophisch, narbenähnlich zurückbleibt, in anderen Fällen durch ein stabiles Oedem ausgezeichnet wird. Diese Symptome fehlen der Rosacea gänzlich. Eine schuppige Beschaffenheit, die ja das Ulerythem ebenfalls charakterisiert, fehlt der Rosacea nicht vollkommen, doch sind die Schüppchen hier unregelmässig und fettig, dort fast regelmässig vorhanden, sehr trocken und an der Unterseite mit hornigen Fortsätzen versehen. Uebrigens liegt eine Verwechselung beider Affektionen nur dann im Bereiche der Möglichkeit, wenn eine Rosacea als einzelne, kontinuierliche Fläche, nicht wenn sie, wie gewöhnlich, in vielen zerstreuten Flecken auftritt.

In dieser klinischen Schilderung sind implicite schon manche Punkte zur Sprache gekommen, welche für die *Aetiologie* von entscheidender Bedeutung sind. Wenn die Rosacea eine nur durch besondere lokale Verhältnisse eigentümlich veränderte Teilerscheinung des seborrhoischen Entzündungsprocesses der Oberhaut ist, so teilt sie die Aetiologie des letzteren, und wenn, wie ich es seit langer Zeit und—wie ich glaube—mit guten Gründen vertrete, das seborrhoische Ekzem eine parasitäre Oberhautentzündung ist, so sind es die parasitären Keime dieser, welche auch die Rosacea verursachen. Diese bilden also die *wesentliche, die permanente Ursache der Rosacea.* Mit diesem Satze verweise ich zugleich das Heer der seit einem Jahrhundert mit mehr oder weniger Sicherheit angenommenen Ursachen, soweit sie sich überhaupt als haltbar erweisen, in die Klasse der *Hülfsursachen* oder, noch genauer gesagt, der accidentellen *periodischen Ursachen.* Während die Permanenz der wesentlichen Ursache, des seborrhoischen Keimes, die jahrelange Dauer

der Rosacea begründet, begründet die Periodicität der accidentellen Ursachen die in Schüben erfolgende Verschlimmerung und Ausbreitung derselben. Die periodischen Hülfsursachen für sich allein erzeugen nie das klinische Bild der Rosacea, wohl aber genügt dazu bei der eigentümlichen Beschaffenheit der Gesichtshaut der Keim des seborrhoischen Ekzems, nur bleibt das Krankheitsbild in der Entwicklung zurück, wenn nicht die periodischen Hülfsursachen sein Aufblühen befördern.

Diese letzteren zerfallen wieder in die beiden natürlichen Gruppen der *äusseren* oder *lokalen Reize* und der *inneren, entfernten, auf dem Nervenwege zugeführten Reize.*

Unter den lokalen Reizen treten besonders zwei als die wichtigsten von allen accidentellen Ursachen hervor, die fast in keinem einzigen Falle ohne Schuld an der Ausbreitung der Rosacea sind: die *Reibung* und die *Kälte.* Der Einfluss der Reibung der Gesichtshaut mit dem Handtuch und Taschentuch wird gewöhnlich unterschätzt, obwohl jeder weiss, wie leicht ein blasses Gesicht durch Reiben gerötet werden kann. Der Einfluss der Kälte ist schon seit langer Zeit als ein wichtiger Faktor beim Zustandekommen der Rosacea anerkannt, wenn auch fälschlich als zu reichende Ursache[1] angesehen, während sie nur eine der wichtigsten accidentellen Ursachen ist. Stärker noch als die Kälte allein wirkt eine vorübergehende starke Abkühlung mit nachfolgendem Wärmeeinfluss und am stärksten, wenn ausser der Kälte gleichzeitig noch ein mechanischer Effekt auf die Gesichtshaut ausgeübt wird, so z. B. der Eintritt in ein stark geheiztes Zimmer nach einem Marsch oder Ritt gegen eisigen Wind. Als dritter unter den lokalen Reizen ist neben der Reibung und der Kälte der *chemische Reiz* zu nennen, welcher meistenteils in der Gestalt von *unpassenden Medikamenten* auf die Rosacea verschlimmernd einwirkt. Schon *Willan* wusste, dass seine "Acne Rosacea" im Gegensatz zu seinen anderen Akneformen "milde astringierend" behandelt und jeder Reiz vermieden werden musste. *Besnier* und *Doyon* heben ebenfalls die "Intoleranz" der Affektion hervor und raten zur Anwendung von "Anodyna," und aus demselben Grunde

[1] Das ist sie für den Frost der Nase.

ist die Rosacea für viele praktische Aerzte ein *Noli me tangere.* Dieselbe Bedeutung hat das Wort von *F. Hebra,* dass auch bei der von ihm empfohlenen Behandlung gewöhnlich "zuerst eine Verschlimmerung" eintrete. Wir werden sehen, dass bei richtiger Behandlung die Rosacea anstandslos heilt, ohne dass erst ein "Stadium der Reizung durch Medikamente" zu überwinden ist; wir werden uns aber bei der Behandlung der Rosacea stets dieser so sehr begreiflichen besonderen "Reizbarkeit" der schon unter einem permanenten Reiz leidenden Gesichtshaut erinnern müssen.

Die inneren, auf reflektorischem Wege der Gesichtshaut zugeführten Reize lassen sich alle kurzerhand unter dem Begriffe der Blutwallungen zum Kopfe zusammenfassen, seien sie als mehr zufällige und seltnere Ereignisse durch die verschiedensten Umstände hervorgerufen oder als *habituelle Wallungen* Folgen bestimmter Nerven-, Gefäss- oder Herzaffektionen. Es sind unter der langen Ungewissheit über die wahre Ursache der Rosacea sehr viele Affektionen innerer Organe, man kann sagen, der Reihe nach so ziemlich alle als wirksam beschuldigt worden. Schon *Hardy* hat die seit *Biett* und *Cazenave* in Frankreich angeschuldigten Magen-, Leber- und Uterusaffektionen von diesem Verdachte freigesprochen und auch die von *F. Hebra* mit grosser Ausführlichkeit behandelten Menstruationsanomalien nicht gelten lassen—und sehr mit Recht. Alle diese Komplikationen beruhen auf einem zufälligen Zusammentreffen und können eine Rosacea nur dann verschlimmern und unterhalten, wenn sie mit Blutwallungen kompliziert sind, welche diese Wirkung aber auch ganz für sich ausüben. Viel eher sind diejenigen *Zustände* und *Gewohnheiten* verantwortlich zu machen, welche direkt die Neigung zu Blutwallungen befördern, so die *habituelle Verstopfung, kalte Füsse* und *sitzende Lebensweise* oder, wie *Hardy* treffend bemerkt: die Beschäftigung mit der Feder und der Nähnadel. Vieles, was Menstruationsanomalien und Magenleiden zugeschrieben wurde, wird in diesem Zusammenhange erst verständlich. Inwiefern Katarrhe der Nasenschleimhaut mit der Rosacea ätiologisch in Zusammenhang stehen können und dass für gewöhnlich eine *Rhinitis nicht* als Ursache in Frage kommt, ist bereits

oben erwähnt. Hier müssen wir aber nicht vergessen zu betonen, dass die Reibung des bei allen Affektionen der Nasenschleimhaut viel gebrauchten Taschentuches sehr zur Verschlimmerung einer bestehenden Rosacea beiträgt, ein äusserer Reiz, der langdauernde Parese der Hautgefässe zur Folge hat und nur zu gewöhnlich ist, um beachtet zu werden.

Wir kommen hiermit zu den letzten und—wenn man der Literatur unbedingten Glauben schenken könnte—wichtigsten unter den accidentellen Ursachen, zu der Blutwallung durch Ingesta und ganz speziell durch *Alkohol.* Dass die rote Nase das heitere und natürliche Abzeichen der Schlemmer und besonders der Trinker sei, ist ein uralter Volksglaube, dem sich auch die Aerzte aller Zeiten nicht ganz entziehen konnten.

Freilich wussten es die Aerzte besser, und seit *Devergie* haben die meisten besonnenen Dermatologen darauf aufmerksam gemacht, dass sehr oft die mässigsten Leute mit ausgesprochener Rosacea umherwandeln. In England weist man darauf hin, dass hochwürdige, über jedem Verdachte des Poculierens erhabene Geistliche an diesem Uebel leiden, ein Argument, dem bei uns, im Vaterlande *Grützners*, allerdings nicht eine ebenso hohe Beweiskraft zukommen würde. Aber muss es nicht Jeden, der nur einigermassen beobachtet, stutzig machen, dass so viel mehr Frauen an Rosacea leiden als Männer, was doch umgekehrt sein müsste, wenn jene Lebensgewohnheiten einen so grossen Einfluss wirklich besässen? Im Grunde weiss jeder erfahrene Dermatologe, dass höchste Mässigkeit, ja absolute Abstinenz nicht im mindesten vor Rosacea schützt; aber seit *Rayer* die Couperose als ein viel schlimmeres Uebel hinstellte als die Akne und *Bazin* von der "unheilbaren Trinkernase" sprach, sind die Dermatologen im allgemeinen doch nur zu sehr geneigt, mangelhafte Heilerfolge bei dieser Krankheit den Patienten in die Schuhe zu schieben. *F. Hebra* hält die Rosacea oft für unheilbar, "da üble Gewohnheiten nicht gelassen werden," und wenn *Lesser* sagt, dass eine ätiologische Behandlung oft unmöglich sei, so hat er in erster Linie auch wohl den bösen Alkohol im Auge.

Tatsächlich liegt die Sache so, dass kein erfahrener

Dermatologe ernstlich den gewohnheitsgemässen Alkoholgenuss als zureichenden Grund für das Entstehen der Rosacea annimmt. Ich aber gehe weiter und behaupte nach langjähriger Erfahrung, dass dieses Moment nicht bloss keine wahre Ursache der Rosacea ist, sondern auch nur in sehr seltenen Ausnahmefällen die Rolle einer Hülfsursache spielt. Die Rosaceapatienten gehören nämlich fast stets zu den mässigsten Menschen und wenn einmal Gewohnheitstrinker, was natürlich auch vorkommt, mit Rosacea behaftet sind, so lassen sich regelmässig noch andere schädliche Momente, wie Kälte und Wind bei Kutschern,[1] auffinden, ohne welche der Alkohol allein nicht diese schädigende Wirkung entfaltet hätte.

Hiermit soll natürlich nicht geleugnet werden, dass unter Umständen ein Glas Wein schon eine plötzliche Blutwallung zum Kopfe veranlasst und dass reichliche Mahlzeiten, bei denen viel Wein getrunken wird, langdauernde Hyperämie der Gesichtshaut zur Folge haben können, die für eine bestehende Rosacea verhängnisvoll werden mögen. Aber das ist eben das Bemerkenswerte, *dass die Rosaceapatienten im allgemeinen jede solche Gefässaufregung*, wie sie durch Alkohol oder ein anderes Genussmittel (Kaffee, starke Gewürze) erzeugt werden kann, *ängstlich vermeiden.* Sie kennen die Schädlichkeit sehr gut und wissen nicht nur, dass sie sofort darunter zu leiden haben, sondern fürchten sich noch weit mehr vor dem unbegründeten, aber allverbreiteten Vorurteil, dass ihr ganzes Leiden vom Trinken herrühre. Von der Gesellschaft in eine Art humoristicher Acht erklärt, haben sie gewöhnlich längst, ehe sie den Arzt aufsuchen, sich nolens volens zu einem mässigen, ja entbehrungsreichen Leben, zu einer freiwilligen Abstinenz erzogen. Mit einem Wort: *sie sind mässig, weil sie an Rosacea leiden.* Der Arzt kommt also, wenn er den Mässigkeitsapostel spielen

[1] Dass grade bei Kutschern und besonders Droschkenkutschern sich relativ viel Prachtexemplare von Rosacea und Rhinophym finden, ist leicht verständlich. Hier lösen sich die accidentellen schädigenden Ursachen in regelmässigem Wechsel ab. Um der Kälte und dem Wind zu widerstehen, geht der mit Rosacea behaftete Kutscher in die warme Kneipe; dann setzt er sich wieder der Kälte aus u. s. f.; ein richtiger circulus vitiosus.

will, mit seinem guten Rat zu spät; er hat daher auch, wenn er erfolglos ist, nicht die gute Ausrede, dass "böse Gewohnheiten nicht gelassen werden."

Die klinische und ätiologische Auffassung der Rosacea, welcher ich im bisherigen Ausdruck verliehen habe, führt nun, wie sich leicht ergibt, zu einer ganz anderen und neuen Gestaltung der *Prognose.* Aus einer früher ganz schlechten, in neueren Zeiten immer noch recht zweifelhaften ist sie dank der veränderten Anschauung vom Wesen der Rosacea eine *durchaus gute* geworden. Früher kämpfte man gegen ein Heer von entfernten, unbekannten Ursachen ohne Hoffnung auf Erfolg, ut aliquit fieri videretur, und der Volksmund erklärte die "Couperose" für unheilbar. In neueren Zeiten tat man örtlich mehr; alle Hülfsmittel der kleinen Chirurgie führte man sogar ins Feld, da man der Wirkung chemischer Mittel bei dieser Affektion wenig Vertrauen entgegenbrachte, und überall lautete das letzte Urteil: die Prognose ist unsicher. Selbst ein Meister der örtlichen Behandlung wie *F. Hebra* nimmt seine Zuflucht zu den "bösen Gewohnheiten," um Miserfolge zu erklären. Wir können aber jetzt mit Fug und Recht sagen: *jede Rosacea ist heilbar, und zwar auf relativ einfachem Wege.* Dieses gilt auch für die hochgradigsten Fälle; um vieles mehr aber noch für die leichteren und die Anfänge. Diese besser als bisher zu beobachten und frühzeitiger als bisher einer *geeigneten Therapie* zu unterwerfen, ist nun die Sache der praktischen Aerzte.

Da wir wissen, dass alle accidentellen oder Hülfsursachen doch nur durch das Medium der *Blutwallung zum Kopfe* auf die Rosacea einwirken, so haben wir *nicht jenen*, sondern *nur dieser* alle unsere Aufmerksamkeit zuzuwenden. Wir beginnen *nicht* damit, dem Patienten eine bestimmte Diät vorzuschreiben, dieselbe mag für begleitende Konstitutionsanomalien noch so empfehlenswert sein, sondern wir haben zuerst *den Patienten zu fragen*, ob er bemerkt habe, dass gewisse Speisen oder Getränke bei ihm sofort eine Blutwallung nach dem Gesichte zur Folge haben und welche. Wir entgehen dadurch der unangenehmen Lage, dem Patienten autoritativ etwas zu verbieten, was er längst schon selbst

vermieden hat und der ebensowenig beneidenswerten, ihm etwas in schablonenhafter Weise zu untersagen, was gar keinen Einfluss auf die Parese *seiner* Hautgefässe besitzt. Der Patient weiss stets besser als wir, ob bei ihm grade eine heisse Suppe oder ein Glas Rotwein bei Tische oder eine Tasse Kaffee nach Tische oder ein saurer Salat oder Pfeffer oder Ingwer oder eine Kombination dieser Reizmittel oder kein einziges derselben den Effekt einer *sofortigen Erschlaffung* der Hautarterien im Gesichte besitzt. Was wir tun können ist nur, ihn darin zu bestärken, die als solche für seinen speziellen Fall erfahrungsgemäss feststehenden Reizmittel zu vermeiden und, vielleicht in Zukunft noch mehr als bisher, seine Natur nach dieser Richtung zu studieren. Es kommen bei dieser Erörterung die merkwürdigsten Bekenntnisse zutage, und ich habe mich viel öfter veranlasst gesehen, die von anderen Aerzten und Laien eingeschüchterten Patienten wieder an ihre frühere Lebensweise, wenn sie ihnen sonst gut bekam, ja selbst an Getränke und Gewürze, wieder zu gewöhnen, da sie "erfahrungsgemäss keine Verschlimmerung der Hautröte bewirkten," als die armen Dulder noch weiter in ihrem Lebensgenuss zu beeinträchtigen.

Nach dieser einleitenden Erörterung, der, wie man sieht, garnicht die fundamentale Bedeutung zukommt wie man allgemein glaubt, wendet man sich direkt zur Beseitigung der in jedem Falle vorhandenen *wirklichen* Schädlichkeiten; es sind die besprochenen zwei: Reibung und Kälte; mit diesen nimmt man es aber um so ernster. Alle Reinigungen und Waschungen des Gesichtes sind mit schädlicher Reibung verbunden; da sie nicht zu umgehen sind, müssen sie womöglich auf eine beschränkt und *auf den Abend* verlegt werden, damit nicht weitere Reizungen hinzutreten. Kaltes Wasser ist der abnorm blutreichen und daher abnorm warmen Gesichtshaut angenehm, aber nicht zuträglich, da regelmässig nach seiner Anwendung eine nachhaltige reaktive Blutwallung folgt. Es wird daher niemals kaltes, sondern nur *warmes Wasser* mit der Gesichtshaut in Berührung gebracht. Diese Ueberlegungen allein leiten schon zu einem strikt durchzuführenden, für alle Rosaceapatienten gleichmässig förderlichen Behandlungsplan. Der Staub des Tages wird *abends* vor dem

Zubettegehen mit *warmem* Wasser—und eventuell einer sehr milden Seife—leicht abgespült und die Haut dann nicht durch Abreiben, sondern durch leichtes Betupfen mit weichen Tüchern (alten Handtüchern, alten Taschentüchern) getrochnet, wobei es garnicht schadet, wenn die letzte Feuchtigkeit der spontanen Verdunstung überlassen wird. Es wird sodann eine der später zu besprechenden, spezifisch wirksamen Pasten oder Salben auf die erkrankte Haut aufgestrichen (nicht eingerieben) und eine *Mullbinde* mit so wenig Touren wie möglich, aber genügend fest so um das Gesicht gelegt, dass sie wenigstens den grössten Teil der Nacht sitzen bleibt. Viele Touren oder eine dichtere Binde würden das Gesicht zu warm machen; die Binde ist nötig nicht nur um die Beschmutzung der Kissen und das Abwischen der Salbe, sondern vor allem um das *Reiben der Gesichtshaut auf den Kissen zu vermeiden*, was bei der Rosacea wie bei jeder Form von Gesichtsekzem schädlich ist. Bei der Morgentoilette ganz besonders ist das, was man zu vermeiden hat, wichtiger als das was man tut; hier wird im allgemeinen am meisten gesündigt. Der Laie wäscht, reibt, kühlt und setzt sich dann den Schädlichkeiten des Tages aus, als ob alle diese Dinge nicht grade die besten Mittel wären um jede Rosacea zu verschlimmern. Am ratsamsten wäre es, die während der Nacht erzielte Abblassung dadurch bei Tage zu erhalten, dass man *morgens* garnichts täte und die *Gesichtshaut nicht anrührte*, höchstens die Salbenreste durch sanftes Ueberwischen unsichtbar machte. Auch ein leichtes Ueberwischen mit einem (hautfarbenen) Puder würde nicht schaden. Dazu sind aber viele Patienten nicht zu bewegen; sie wollen morgens eine "Erfrischung" haben. Man muss ihnen dann nur klar machen, dass für ihre Haut nie die "direkte Erfrischung" mit kaltem Wasser, sondern immer nur die "indirekte Erfrischung" durch warmes Wasser passt, und kann ihnen dann erlauben, die Gesichtshaut morgens mit warmem Wasser mehrmals leicht zu betupfen und die Feuchtigkeit der kühlenden Abdunstung zu überlassen oder ohne Reibung abzuwischen.[1] Hierauf folgt dann die Tagesbehandlung mit Puder oder Paste. Während des Tages pflegt

[1] C'est le ton qui fait la musique. Auch *F. Hebra* braucht eine

der Rosaceapatient aber noch mehrmals seinen Teint zu mishandeln, je nachdem die Sonne, der Staub, der Wind oder die Kälte auf denselben eingewirkt haben. Im Sommer, wenn er heisser und röter als andere Menschen nach einem Spaziergange sein Haus betritt, ist sein erster Gedanke: Kaltes Wasser zum Waschen; ebenso auch im Winter, wenn er nach einem Aufenthalt im Freien bei starkem Frost in sein geheiztes Zimmer kommt und die bis dahin durch die Kälte bewirkte Verengerung der Gefässe explosionsartig in eine hochgradige und dauernde Blutwallung umschlägt. Hier ist eine gewisse Selbsterziehung durchaus notwendig; die "Erfrischung" wird nicht im Schlafzimmer und einer Kanne kalten Wassers, sondern in der Küche in einem Topf heissen Wassers gefunden. Man nimmt das Wasser so heiss wie man es irgend ertragen kann, taucht einen Schwamm oder Flanellappen hinein und drückt denselben einige Sekunden auf die heisse Gesichtshaut, entfernt ihn wieder, damit die Hautfläche sich abkühlen kann, benetzt sie wieder mit dem heissen Wasser und so einige Male, bis das Gefühl und das Aussehen im Spiegel anzeigt, dass die Parese wieder dem normalen Tonus Platz gemacht hat. Wenn eine Tagbehandlung indiziert war, folgt dieselbe darauf sofort in Gestalt einer Puder- oder Pastenapplikation. Eine solche "heise Abschreckung" —dieser Name hat sich für die ganze vasotherapeutische Procedur eingebürgert—ist für den Rosaceapatienten stets wohltätig und kann im Verlauf eines Tages öfter wiederholt werden, so besonders nach den Mahlzeiten, nach anstrengenden Arbeiten, Sport, etc. Speziell ist die heisse Abschreckung indiziert, ehe der Patient aus dem Winterfroste in die warme Stube tritt; er wird finden, dass es dann nicht zu der erwarteten Blutwallung kommt. Manchem werden diese Vorschriften zu kleinlich vorkommen, sie sind aber noch nicht detailliert genug und müssen für jeden Fall unter Berücksichtigung seiner Eigenheiten noch vervollständigt werden. Wer so versteht, statt der vermeintlichen Diätfehler dem Patienten seine bisherigen Sünden in der Hautpflege klar zu machen und diese abzustellen, hat schon den schwierigsten

Schwefelsalbe wie ich, aber er lässt sie "abends energisch einreiben" und "morgens abwaschen."

Teil der Behandlung überwunden. *Die Vermeidung jeder Reibung und des Kalten Wassers und die Verlegung der Reinigung auf den Abend* bessert schon jede Rosacea ohne weiteren Gebrauch von Medikamenten zusehends.

Die heisse Abschreckung ist nicht nur als Prophylaxe und Therapie derjenigen Blutwallungen, welche durch äussere Reize hervorgerufen werden, von grossem Werte, sondern ebenso wirksam bei den reflektorisch erzeugten, habituellen Blutwallungen. Immerhin ist es sehr wünschenswert, dass wir für diese Fälle auch ein inneres *Mittel* besitzen, welches durch direkte und indirekte Einwirkung auf die Blutgefässe die Neigung zu Blutwallungen herabsetzt, und ein solches besitzen wir seit 1884 im Ichthyol. Ich wüsste kein anderes und ebenso unschuldiges Mittel zu nennen, welches im Stande wäre, im Laufe einiger Wochen die Wallungen zum Kopfe zu mildern und zu beseitigen. Ob es sich hierbei um eine direkte Wirkung vom Blute aus auf die Gefässe, oder eine indirekte handelt, welche von anderen Organen aus wirkt, ist noch unentschieden; wahrscheinlich ist beides der Fall. Denn wenn die Wirkung auch bei sonst vollkommen gesunden Organen stets eintritt, so ist sie doch am eklatantesten bei solchen weiblichen Personen, bei denen noch eine Reihe anderer Organleiden gleichzeitig dadurch gebessert werden, wie Anämie, Muskelschwäche, Appetitlosigkeit, Amenorrhoe, wie ja überhaupt magere, blutarme, appetit- und kraftlose Menschen für den Ichthyolgebrauch prädestiniert sind. Die gleichzeitige, unbestrittene *Regulierung der Darmfunktionen und der Circulation*[1] ist wohl der Haupthebel, mittels dessen das Ichthyol so starken Einfluss auf die Blutwallungen gewinnt. Eine abführende Wirkung besitzt

[1] Ich möchte hier citieren, was der praktisch so erfahrene *Malcolm Morris* über die Vorzüge des inneren Ichthyolgebrauches bei der Rosacea sagt: "After the removal of any obvious cause, the most trustworthy internal remedy is ichthyol, which often brings about a marked improvement after even a few days' administration. It regulates the bowels, prevents flatulence, helps the digestion, stops the reflex flushing, and steadies the circulation. I usually begin by ordering five grains in capsules, tabloids, or pills, to be taken on an empty stomach early in the morning and late at night. In a few days I increase the dose to seven grains, and afterwards to ten grains and upwards until the desired results are obtained." (Malcolm Morris, *Diseases of the Skin*, Cassell & Co., London, 1904, p. 171.)

Ichthyol bekanntlich nicht; wo eine solche indiziert ist, muss man auf anderem Wege nachhelfen. Man kann das Ichthyol in überzuckerten Pillen à 0.1 gr. oder in Kapseln à 0.5 gr. in der Tagesdosis von 0.5–2.0 verabreichen und tut immer gut, mit der Dosis allmählich zu steigen. Billiger ist die Verschreibung in wässriger Lösung und auch in manchen Beziehungen besser. Man verordnet:

Ichthyoli, 5
Aq. destillat., 10

Und ein Tropfglas. S. Dreimal täglich 5–30 Tropfen in Wasser zu nehmen.

Man tropft zunächst 5 Tropfen in ein Weinglas und giesst es halb oder ganz voll mit Wasser. Am besten trinkt man noch etwas Wasser hinterher oder nimmt—wenn der Geschmack sehr unangenehm empfunden wird—einen Fruchtbonbon. Die Darreichung geschieht am besten zwischen den Mahlzeiten, beim Aufstehen, mittags und abends vor dem Zubettegehen. In den ersten Tagen pflegt der Magen hin und wieder durch Aufstossen mit Ichthyolgeschmack zu reagieren; solange bleibt man bei der Minimaldosis von 5 Tropfen. Nach einigen Tagen hat sich der Magen daran gewöhnt, nun steigt man täglich oder jeden 2ten Tag um einen Tropfen, nimmt also 3 mal 6, 7, 8 Tropfen u. s. f. bis 3 mal 30 Tropfen, entsprechend 1.5 Ichthyol. Diese Dosis genügt in fast allen Fällen, wenn man Ichthyol in wässriger Lösung gibt und führt durchschnittlich in 3 Wochen eine erhebliche Besserung der Blutwallungen herbei.

Gleichzeitig mit der Beseitigung der accidentellen Schädlichkeiten muss in allen Fällen die *causale Therapie* der Rosacea eingeleitet werden, d. h. die Beseitigung der *wirklichen Krankheitsursachen.* Da die Rosacea eine Teilerscheinung des seborrhoischen Processes ist, so zerfällt die causale Therapie naturgemäss in die *örtliche Behandlung der Rosacea* und in die *Beseitigung aller übrigen seborrhoischen Erscheinungen,* welche die Rosacea begleiten, unter denen eine Blepharitis ciliaris, eine Alopecia seborrhoica und andere Ekzemerscheinungen die wichtigsten sind. Man soll den Rosaceapatienten

nie aus der Behandlung entlassen, ehe auch solche Manifestationen des seborrhoischen Ekzems gründlich beseitigt sind. Für die Praxis kann man die Rosaceafälle einfach in leichte und schwere einteilen. Zu ersteren gehören diejenigen, welche sich in bunter Weise aus erythematösen, schuppenden, vergilbten, glatten Flecken zusammensetzen und bei denen nur wenige Papeln und Pusteln ausgebildet sind. Als schwerere haben diejenigen zu gelten, bei welchen nach längerem Bestande eine gleichmässige Rötung sich in diffuser Weise über den grössten Teil des Gesichtes ausgebreitet hat, wo viele Papeln und Pusteln die Oberfläche höckerig auftreiben und Venenektasien reichlich gebildet sind.

Das einfachste und beste Mittel für die leichteren Fälle von Rosacea ist die auch sonst bei allen seborrhoischen Ekzemen hauptsächlich gebrauchte *Zinkschwefelpaste.*[1] Nur muss sie wie alle Salben und Pasten für das Gesicht durch Zinnober rötlich gefärbt sein, um auch bei Tage in unauffälliger Weise angewandt werden zu können, und erhält zweckmässig einen kleinen Zusatz Vaseline, da alle Pasten bei Rosacea ohne Druck und Reibung, nur durch einfaches Aufstreichen auf der Haut verteilt werden sollen.

Man verschreibt also etwa:

Pastae Zinci sulfuratae rubrae, 35
Vaselini, 5
Mf. Pasta.

Diese Paste wird abends nach der Reinigung mit heissem Wasser appliciert und mit einer Mullbinde niedergebunden (s. oben.). Kann der Tag zur Behandlung benutzt werden, so streicht man sie leicht auf die befallenen Stellen auf, solange man zuhause ist, und wischt sie ab, bevor man ausgeht. Dann wird teils zum Schutz gegen die Witterung, teils zur

[1] Zinci oxydati, 14
Sulfur praec., 10
Terr. siliceae, 4
Ol. benzoinat., 12
Adipis benzoinat., 60
Mf. Pasta. S. Pasta Zinci sulfurata.

Past. Zinci sulfur., 99
Cinnabaris 1
Mf. Pasta. S. Pasta Zinci sulfurata rubra.

Verdeckung der Salbenreste ein *hautfarbener Puder*[1] auf die Stellen aufgewischt:

Pulv. cuticoloris, 9
Ichthyoli, 1
Mf. Pulvis.

Hierbei muss man nicht vergessen, dem Patienten zu sagen, dass arzneiliche Puder nicht mit dem Puderquast eingestäubt, sondern wie eine Salbe mit dem Finger sanft *eingerieben*, bei der Rosacea aber *nur aufgetupft* werden. Nachdem der Ueberfluss des Puders wieder mit einem weichen Tuch abgewischt ist, kann der Patient ausgehen und ist dann nicht nur in unauffälliger Weise unter andauernder Behandlung, sondern auch ziemlich gut gegen Witterungseinflüsse geschützt. Der angegebene *Puder* ist nicht nur sehr brauchbar als Tagesbehandlung, sondern stellt auch für sich allein eine *vollkommen ausreichende Tag- und Nachtbehandlung für die leichtesten Fälle* von Rosacea dar, so insbesondere für jene ersten umschriebenen Rötungen der Nase, mit denen Patienten die auf ihren Teint sehr eigen sind, bereits den Arzt aufsuchen. Man kann dann, um alles Gute in einem Recepte zu vereinen, dem obigen Puder noch etwas Schwefel zusetzen:

Pulv. cuticol., 8
Sulf. praecip., 1
Ichthyoli, 1
Mf. Pulvis.

Je nach dem natürlichen Fettgehalt der Gesichtshaut später oder früher bedingt der andauernde Gebrauch der schwefelhaltigen Paste eine künstliche Sprödigkeit der Haut, besonders an den nicht erkrankten Stellen, welche zu einer Modifikation der Behandlung Anlass gibt. Anstatt die Paste fetthaltiger zu verschreiben, tut man besser, nebenher Cold Cream in der Weise brauchen zu lassen, dass der Patient bei jedesmaligem Gebrauche zuerst das ganze Gesicht

[1] Boli rubrae, 0.5
Boli albae, 2.5
Magnes. carbon., 4.0.
Zinci oxydati., 5.0
Amyli oryzae, 8.0
Mf. Pulvis subt. S. Pulvis cuticolor.

mit Cold Cream einreibt und dann auf die hauptsächlich befallenen Stellen etwas von der Paste darüber streicht; auf diese Weise wird die Gesamtsprödigkeit beseitigt und der Rest der Affektion gleichzeitig weiterbehandelt. Der Patient lernt es bald, die Paste mehr und mehr durch Cold Cream zu ersetzen, je näher die Heilung rückt, die durchschnittlich bei leichten Fällen in einigen Wochen erreicht wird.

In den schwereren Fällen ist die Grundbehandlung dieselbe, nur muss der oberflächlich wirkenden Zinkschwefelpaste das tiefer wirkende, antiseborrhoische *Unguentum resorcini compositum*[1] zu Hilfe kommen. Man verordnet dasselbe entweder nebenbei, lässt das ganze Gesicht mit Zinkschwefelpaste behandeln und in alle schwerer befallenen dunkelroten, papulösen und pustulösen Stellen die Resorcinsalbe darüber streichen, oder man verschreibt von vornherein:

Pastae Zinci sulfuratae rubr., 20–30
Ung. resorcini compos., 10–20
Mf. Pasta.

Diese sehr bewährte Mischung hat noch einige praktische Vorteile, auf die ich aufmerksam machen möchte. Der Vaselingehalt der Resorcinsalbe gibt der Paste die für die Rosacea erwünschte Konsistenz und der Ichthyolgehalt derselben gleichzeitig einen gelben Stich, der die ganze Mischung der natürlichen Hautfarbe ähnlicher macht. Denn vollkommen hautfarben werden unsere Salben bekanntlich nur, wenn sie die *drei Hautfarben: Weiss, Gelb und Rot* enthalten, die in dieser Mischung durch Zinkoxyd, Ichthyol und Zinnober gegeben sind. Die Folge ist, dass grade diese äusserst wirksame, starke Mischung ganz gut auch bei Tage ohne alle Bedeckung im Gesicht gebraucht werden kann; man trägt nur ganz wenig von derselben auf die hauptsächlich befallenen Stellen auf und verstreicht die geringe Quantität sanft mit dem Finger, bis sie unsichtbar geworden ist. Bei den schwersten Fällen mit universeller dunkelroter Gesichtsfarbe trägt man die Mischung abends ziemlich dick auf, bindet

[1] Resorcini, Ichthyoli āā 5
Acidi salicylici, 2
Vaselini flavi, 88
Mf. Unguent. resorcini compos.

mit einer Mullbinde ein und wischt am anderen Morgen ohne neue Reinigung der Haut die Reste mit einem weichen Tuche ab; die auf dem Gesichte bleibenden Spuren bilden dann eine ausreichende Tagbehandlung und zugleich sowohl Schutz wie—durch den gelben Ton—eine hautfarbene Schminke, die gerne mit in Kauf genommen wird. Endlich führt die Mischung auch nicht so leicht eine allegemeine Sprödigkeit der Haut herbei wie die einfache Zinkschwefelpaste.

Durch diese Pastenbehandlung werden mit Sicherheit und ohne alle Unannehmlichkeiten für den Patienten alle einzelnen Symptome der Rosacea, Röte, Schuppen, Vergilbung, Papeln und Pusteln, bis auf die Venenektasien beseitigt; diese treten auf der blasseren Haut manchmal zogar nun erst deutlich hervor. Sie würden durch eine sehr lange fortgesetzte Kur auch nur wenig beeinflusst werden. Man zögert daher in diesem Zeitpunkt nicht und beseitigt dieselben auf einmal in möglichst schonender Weise durch den Mikrobrenner.[1] Während der Patient sitzt und den Kopf etwas rückwärts fest anlegt, zieht man bei schwach glühendem Platinbolzen des Mikrobrenners mit der *nicht glühenden*, aber heissen, zu einem Ringe gekrümmten Spitze sämtliche Venen, sanft andrückend und genau, nach. Sie verschwinden unter dem heissen Druck sofort, indem sie durch das anschwellende kollagene Gewebe komprimiert werden,[2] und statt ihrer erscheinen weissliche Streifen derselben Form, die aus verbrannter Hornschicht bestehen. Eine allgemeine oder örtliche Narkose habe ich zu diesem Zwecke nie nötig gehabt. Man muss sich nur erinnern, dass die Nervenendapparate am dichtesten sich an der Mund- und Nasenöffnung zusammendrängen, daher diese Gegenden zuerst meiden und statt dessen einzelne Venen der seitlichen Wangen- oder oberen Nasenpartie zum Verschwinden bringen. Jeder Patient, der einmal sieht, wie rasch die roten Adern auf diese Weise unsichtbar zu machen sind, erlaubt dann gerne auch die Verödung der Venen an den empfindlicheren Stellen,

[1] *Unna*, "Ueber einen neuen Mikrobrenner und seine Anwendung bei der Rosacea und anderen Hautkrankheiten," *Mon. f. pr. Dermat.*, Bd. x., 1890, pg. 32. *Der Mikrobrenner*, Ebenda, Bd. xxvi., 1898, pg. 388.

[2] s. *Unna*, Histopathologie der Haut, pg. 81.

als welche ich besonders die Nasenflügel und das Nasenseptum hervorhebe. Die Nachbehandlung besteht im öfteren Auftragen des obigen hautfarbenen Puders; dieses hat den Zweck, die gebrannten Stellen stets trocken zu erhalten und als trockene Schorfe sich langsam von selbst abstossen zu lassen. Deshalb ist auch jedes Reiben und Waschen zu widerraten, denn es würde zur Folge haben, dass die Gefässe sich wieder mit Blut füllen und die kleine Operation umsonst war. Nach 8 Tagen sind die Gefässe stets narbenlos verödet, wenn sie gut mit dem Mikrobrenner nachgezogen und trocken gehalten waren. Dann muss der Patient sich wieder vorstellen und eventuell übrig gebliebene Venen auch noch veröden lassen.

Dass diese unblutige, einfache und sichere Methode den von *F. Hebra* angegebenen *blutigen* der Längsschlitzung und der queren Zerschneidung durch seinen Stichler bei weitem vorzuziehen ist, wird jeder zugeben, der beide Methoden geübt hat. Aber auch die neuerdings von mehreren Seiten empfohlene elektrolytische Verödung der Venen kann sich, was Mühelosigkeit und Schnelligkeit betrifft, nicht mit der Behandlung durch den Mikrobrenner vergleichen. Die multiplen Skarifikationen *Balmanno Squires*, *Emile Vidals* und *Veiels* gehören mit den ingeniösen hierfür erdachten Instrumenten ebenso der Geschichte an wie die Salpetersäureätzungen *Naylers* und die Blutegel und Schröpfköpfe von *Ambroise Paré*.

Die bisherige Schilderung der Therapie bezieht sich auf die ambulatorische Sprechstundenbehandlung. Leichtere Fälle heilen darunter in 2–4 Wochen, schwerere aber erst in 2–4 Monaten und es entsteht die Frage, ob wir nicht auch diese Fälle durch eine energischere Haus- oder Klinikbehandlung ebenfalls in 4–6 Wochen zur Heilung bringen können. In der Tat ist das möglich mittels der von mir 1890 eingeführten Behandlung durch *Schälpasten*[1] und sehr begreiflich, wenn wirklich die Rosacea nur eine durch die Lokalisation modifizierte Form eines oberflächlichen, infektiösen Katarrhs der Haut, einer seborrhoischen Oberhautentzündung ist. Denn mittels mehrmaliger Abschälung beseitigen wir

[1] *Monatshefte f. pr. Derm.*, Bd. x., 1890, pg. 32.

sicher am gründlichsten sämtliche infektiöse Keime zugleich mit ihrem Mutterboden, der verhornten Oberhaut.

*Die Schälpaste* (*Pasta lepismatica*) ist eine 40–50% Resorcin enthaltende Zinkpaste,[1] der milderen Wirkung wegen gerne Ichthyol zugesetzt wird, wodurch die Paste allerdings ein braunes Aussehn gewinnt und für den ambulatorischen Gebrauch ganz ungeeignet wird. Doch für den Gebrauch im Hause oder in der Klinik ist die gewöhnliche Verschreibung:

Pastae Zinci
Resorcini subtil. pulv., $\overline{aa}$ 20.0
Ichthyoli
Vaselini, $\overline{aa}$ 5.0
Mf. Pasta. S. Pasta lepismatica.

Mit dieser Paste wird die Gesichtshaut, soweit sie erkrankt ist, zweimal täglich eingerieben. Gleich das erste Mal bildet sich eine bräunliche Hornschwarte unter mehr oder weniger bedeutendem Brennen; ist diese einmal gebildet, so empfindet der Patient bei den späteren Einreibungen nur wenig mehr. Doch kann man bei empfindlichen Patienten von Anfang an 2–5% Anästhesin der Paste zusetzen. Die Paste muss stets so eingerieben werden, dass keine scharfen Ränder entstehen. Nach der Haargrenze und sämtlichen Schleimhauteingängen hin, besonders auf den Augenlidern, muss daher mit *trockenem* Finger der Salbenrand nur leicht ausgestrichen oder—wie der Kunstausdruck heisst:—"verduftet" werden, sonst stechen nach der Schälung die geschälten und ungeschälten Partien zu stark von einander ab. Man bemühe sich nicht bei umschriebenen Rosaceaflecken, nur diese oder nur die Mittelpartie des Gesichtes schälen zu wollen; die Resultate sind trotz der grösseren Mühe nicht so gut wie bei Gesamtschälungen der Gesichts-

[1] Hierfür empfehle ich nur meine Kieselgur enthaltende, nicht die officinelle Zinkpaste, da die starke Eintrocknung durch Kieselgur hier als Corrigens des Resorcins nötig ist. Ihre Formel ist:

Zinci oxydati, 24
Terrae siliceae, 4
Ol. benzoinat., 12
Adipis benzoinat., 60

haut. Nachdem das Gesicht auf diese Weise drei Tage hindurch morgens und abends behandelt wurde, ist die Hornschwarte von genügender Stärke, um als eine schreibpapierdicke Membran in toto sich abzulösen. Man kann dieses unter jeder deckenden Paste abwarten. Aber da die stark bewegten Teile um den Mund zuerst sich ablösen, einreissen und von hier aus weiterreissend die Maske sich in einzelnen Fetzen ablösen würde, so tut man besser, vom 4–7ten Tage durch Einwicklung mit Zinkichthyolsalbenmull oder Einpinselung von Zinkichthyolleim (und Auftupfen von Watte) eine provisorische Schutzdecke herzustellen. Manche Patienten haben nach der Schälung ein Bedürfnis nach starker Einfettung; für diese passt der Salbenmull. Anderen ist der letztere zu warm und sie ziehen die Leimdecke vor. Am raschesten und angenehmsten vollzieht sich die Ablösung der Resorcinsschwarte, wenn man bei Tage und bei Nacht zwischen Salbenmull und Leim wechselt. Keinenfalls aber darf der Patient die Membran stückweise abreissen oder die Leimdecke rasch durch Reiben mit heissem Wasser entfernen wollen.[1] Ist am 7ten Tage der letzte Rest der Resorcinschwarte, der gewöhnlich an der Stirnhaargrenze und Nasenspitze am längsten haftet, abgefallen, so präsentiert sich die Gesichtshaut viel reiner, feiner, blasser und glatter. Auch einzelne der kleineren Varicen sind verschwunden; zugleich aber—ein ungewollter, jedoch nicht minder befriedigender Nebenerfolg — sämtliche Epheliden und sonstige oberflächliche Pigmentierungen. Das Pigment wandert nämlich, vom Resorcin angelockt, in die resorcinierte Hornschicht hinein. Kein Wunder daher, dass besonders die Patienten weiblichen Geschlechts, nach Wahrnehmung dieser sichtlichen Hautverjüngung sich gerne der Wiederholung der Procedur unterziehen. Von dieser Schälkur, die genau eine Woche in Anspruch nimmt, genügen durchschnittlich 4 für die schwereren und 6 für die allerschwersten Formen der Rosacea. Wo sehr ausgedehnte Varicen vorhanden sind, lässt man am besten in der Mitte

[1] Man betupft die Leimdecke mit sehr heissem Wasser alle paar Minuten und lässt dazwischen abkühlen; nach einer halben Stunde ist der Leim dann auf schonendste Weise entfernt.

eine Pause von einer Woche eintreten, um die grösseren Varicen sämtlich mit dem Mikrobrenner zu veröden.

Nur selten besteht für diese Schälkur eine Contraindikation, nämlich dann, wenn eine Idiosynkrasie gegen Resorcin vorhanden ist. Dieses bemerkt man gleich am ersten Tage durch starkes Brennen, Anschwellen der Haut und Blasenbildung; es kommt nur sehr selten vor. In solchem Falle muss sofort die Paste abgewaschen und das Gesicht dick mit Mehl eingepudert oder eingebunden werden, bis die Schwellung vorbei und die Blasen eingetrocknet sind. Auch in diesen Fällen stösst sich eine unregelmässige Resorcinmembran mit sichtlich günstigem Erfolge für die Rosacea ab; aber die Weiterbehandlung wird man dann doch mit Zinkschwefelpaste durchführen.

Die bei regelrechter klinischer Behandlung ausgezeichneten Erfolge der Schälkur veranlassen manche Patienten zu dem Wunsche, sie auch bei ambulatorischer Behandlung vom Arzte durchgeführt zu sehen. Da es dann nicht darauf ankommt, auf einmal eine möglichst dicke Hornmenbran zur Abstossung zu bringen, sondern umgekehrt, die Abschälung möglichst wenig sichtbar zu machen, wenn die Kur sich auch viel länger hinauszieht, so verdünnt man die Schälpaste etwas mit Vaselin und lässt natürlich das braunfärbende Ichthyol weg. Die Formel heisst dann:

Past. Zinci
Resorcini subtil. pulv., āā 20
Vaselini, 10
Mf. Pasta.

Die Paste wird nur Nachts gebraucht. Bei Tage wird sie abgewischt, worauf man die Haut einpudert. Beim Waschen abends stossen sich jedes Mal einige Hornlamellen ab, und während der Kur sieht der Teint natürlich grade nicht besonders gut aus; doch gibt es Patienten, speziell Herren, die zur eigentlichen Schälkur die Zeit nicht hergeben, welche sich daraus nichts machen.

Schon während der Behandlung der Rosacea wird man sich um etwaige andere seborrhoische Affektionen zu kümmern haben und diese nach und nach beseitigen. Als besonders

wichtig soll die Behandlung der in nächster Nachbarschaft der Rosacea lokalisierten beiden Affektionen: *Alopecia seborrhoica* und *Blepharitis ciliaris* noch in Kürze betrachtet werden. In *allen* Fällen von Rosacea, speziell der Frauen, lässt man den Kopf waschen und dabei einerseits auf Schuppen, auf umschriebene Ekzemherde und andererseits auf den Haarausfall achten; sehr oft bestehen hier Abweichungen von der Norm, deren sich die Patienten nicht bewusst sind. In den leichteren Fällen genügt dann die Anwendung einer Schwefelpomade und öfteres Waschen. Sind schuppige Herde oder ist stärkerer Haarausfall vorhanden, so sind Einreibungen mit folgender Pomade empfehlenswert:

Ung. pomadin. sulfurati[1]
Ung. resorcini compos., āā 20
Mf. Pomade.

Bei starker Fettabsonderung tritt an Stelle der Schwefelsalbe besser eine Zinkschwefelpaste:

Pastae Zinci sulfurat., 20
Ung. resorcini compos., 10
Mf. Pomade.

Diese Pomaden werden täglich in die gescheitelte Kopfhaut eingerieben, und nach einigen Tagen wird beim Waschen Haarausfall und Beschaffenheit der Kopfhaut geprüft. Man wird hierunter von einer Waschung zur andern eine stetige Besserung wahrnehmen.

Die *Blepharitis ciliaris* erfordet, da die Conjunctiva Schwefel nicht gut verträgt, statt dessen Resorcin, Ichthyol oder Quecksilberoxyd. Als Grundlage der Augensalben dient Zinksalbe, der man von diesen Medikamenten einzeln oder kombiniert je 2–5% hinzufügt. Vor dem Einschlafen wird die Salbe auf die geschlossenen Lidkanten sanft eingerieben. Wenn die Cilien durch besonders festhaftende Krusten verklebt sind, werden Nachts über der Salbe noch Priessnitzsche

[1] Ol. Cacao 30
Ol. amygdal. benz., 65
Sulf. praec., 5
Ol. Rosae, gtt. II
Extrait Violette, Reseda, Jasmin, āā gtt. 40

Umschläge gemacht mit Kamillenthee oder 1%iger Resorcinlösung statt Wasser. Für die fast stets vorhandene *Conjunctivitis* ist das häufige Einträufeln einer Pyraloxinlösung[1] am meisten empfehlenswert:

Pyraloxini, 0.01–0.05
Aq. boracis
Aq. foeniculi, āā 5.0
Mf. Augentropfen

Ich habe mit Hilfe derselben chronische Conjunctivitiden ausheilen sehen, die ärztlicherseits bereits aufgegeben waren.

In Bezug auf die Beurteilung und Behandlung anderer die Rosacea komplicierender Ekzemformen verweise ich auf meine Ekzemmonographie.[2] Doch sei hier kurz bemerkt, dass die oben angegebene Mischung von Zinkschwefelpaste mit komponierter Resorcinsalbe fast in allen Fällen diese Komplikationen am schnellsten beseitigt.

Die Behandlung der Rosacea mit Schwefelpräparaten ist keine neue; schon *Anthony Todd Thomson* (1778–1849), der Zeitgenosse *Willans* und *Batemans*, empfahl gegen sie Schwefel als Puder, und seither hat derselbe stets eine Rolle in der Rosaceatherapie gespielt; aber er wurde nicht für das angesehen, was er wirklich ist, nämlich ein Specificum, ein Antiseborrhoicum ersten Ranges. Nur dadurch ist es zu erklären, dass man glaubte, er müsse "durch Entzündung" wirken, wie es beispielsweise *Wolff* in seinem Lehrbuch gradezu ausspricht. Die von mir angegebene Behandlung vermeidet vielmehr alle Reize, die zur Entzündung und auch nur zur Blutwallung führen, auf das sorgsamste. Damit stellt sich die Rosaceabehandlung auch erst in den richtigen Gegensatz zur Aknebehandlung, bei welcher der Schwefel ebenfalls specifisch wirkt, aber nur unter *Beihilfe* starker, Hornschicht erweichender und hyperämisierender, chemischer und Hornschicht verdünnender, reibender und schabender, mechanischer Mittel. Die Heilung der Akne und der Rosacea geschieht also nicht, wie *Brocq* will, mittelst derselben Mittel, sondern

[1] Pyraloxin ist oxydiertes Pyrogallol (erhältlich von der Schwanapotheke, Hamburg).

[2] *Pathologie und Therapie des Ekzems.* Wien, Hölder, 1903.

trotz des gleichen Specificums auf diametral verschiedenen Wegen.

Mit Recht hat von jeher der praktische Arzt dem Schlusse ex juvantibus ein grosses Gewicht beigelegt. Ich betrachte es deshalb als eine schöne Bestätigung der hier niedergelegten Anschauung über die Grundverschiedenheit zwischen Rosacea und Akne, dass auch die beste und rationellste Behandlungsart beider Affektionen eine diametral entgegengesetzte ist.

## DIE KOMPLEMENTABLENKUNG BEI GONORRHOE UND HAUTKRANKHEITEN

Von Dr. R. Müller und Privatdocent Dr. Moriz Oppenheim, Wien

Im Serum von Tripperkranken kreisen Substanzen, welche man mit der Komplementablenkungsmethode nachweisen kann. Zuerst von den Verfassern im Serum eines an Arthritis gonorrhoica Erkrankten nachgewiesen. Dieser erstmalige einwandfreie Nachweis von Antikörpern, die durch den Gonococcus produzirt werden, wurde von Bruck und später von Vannod bestätigt. Diese Antikörper lassen sich auch bei Epididymitis gonorrhoica, Prostatitis und Metritis und Endometritis gonorrhoica nachweisen, doch ist das Vorhandensein nicht konstant. Es gibt Menschen bei denen das Serum an und für sich hemmend auf die Hämolyse wirkt. Unter diesen Seren stammten die grössere Mehrzahl von Psoriatikern.

# LE GRATTAGE MÉTHODIQUE COMME PROCEDÉ DE DIAGNOSTIC DANS CERTAINES DERMATOSES

Par le Docteur L. Brocq, Paris

Dans une précédente publication, nous avons fait connaître en quoi consiste cette méthode, quels sont les instruments qu'il convient d'avoir pour la bien appliquer (curette spéciale à bords mousses, papier à cigarette, linge fin et blanc, compresseur de verre).

Nous avons précisé quels sont les renseignements que cette méthode peut donner: (caractères des squames, leur adhérence, leur stratification, l'aspect du corps muqueux de Malpighi, la présence ou l'absence de la pellicule sous-squameuse de L. Duncan Bulkley, le degré de sécheresse ou d'exosérose qui existe au niveau de la couche de Malpighi, l'existence ou l'absence de vésicules minuscules intraépidermiques, de purpura traumatique, ou de fines hémorragies, etc. . . .). Enfin nous avons donné un bref résumé des caractères principaux qu'offrent certaines dermatoses soumises à ce grattage méthodique.

Dans la présente communication nous voulons insister sur quelques points particuliers qui nous paraissent avoir une assez grande importance.

1. Quand on a enlevé doucement, couche par couche, les squames sèches qui recouvrent le corps muqueux dans une dermatose squameuse comme le psoriasis, ou les syphilides papulo-squameuses par exemple, on se trouve dans certains cas en présence d'une surface rouge, plus ou moins lisse, qui peut être à peu sèche, ou qui peut laisser sourdre de la sérosité. Quand elle est peu abondante, cette sérosité est perceptible grâce à un papier de soie que l'on applique sur la surface mise à nu et qui s'imprègne des moindres parcelles de liquide exsudé. Cette exosérose est parfois extrêmement

abondante comme dans certaines syphilides, dans certaines formes de psoriasis irritable.

Son degré d'intensité semble être en relation avec le degré de congestion qui existe au niveau des parties atteintes, et il n'est pas indifférent d'en être averti au point de vue du pronostic et au point de vue du traitement.

Il y a des dermatoses rouges et squameuses comme les parapsoriasis en plaques (érythrodermies pityriasiques en plaques disséminées), comme les parakératoses psoriasiformes sèches dans lesquelles après le grattage méthodique des squames superficielles on ne décèle que peu ou point d'exosérose. On peut traiter d'emblée ces éruptions par les topiques les plus énergiques, par les préparations pyrogallées ou chrysophaniques, sans courir trop le risque de voir se développer des poussées érythémateuses ou des érythrodermies exfoliantes généralisées.

Par contre il y a des eczémas, des eczémas séborrhéiques vrais ou parakératoses psoriasiformes ayant de la tendance à la vésiculation, des psoriasis, qui dès qu'ils sont grattés méthodiquement offrent le phénomène de l'exosérose à un degré très accentué. On doit alors se défier des topiques très énergiques: en employant d'emblée dans ces cas des préparations mercurielles, ou pyrogallées où chrysophaniques, on peut développer des poussées inflammatoires considérables et même de véritables crises de dermatite exfoliative. On doit donc dans ces cas où le processus exosérotique est très accentué procéder avec prudence, commencer par prescrire des topiques relativement peu irritants, puis s'élever progressivement dans la série des topiques actifs à mesure que l'on voit qu'ils sont supportés.

Je dois dire cependant que dans la plupart de ces dermatoses à exosérose abondante les badigeons de goudron de houille pur faisant vernis à la surface des téguments donnent d'excellents résultats, et sont presque toujours admirablement supportés pourvu que l'on se conforme aux règles suivantes. Après un premier badigeon fait de manière à couvrir toute la partie malade d'une couche assez épaisse de goudron pur, on laisse sécher, on poudre par-dessus avec beaucoup de talc, et on recouvre de tarlatane aseptique ou de toile fine et blanche.

Dès le lendemain on applique une pâte de zinc additionnée d'un dixième d'ichthyol, et on continue ce pansement jusqu'à ce que tout vestige de goudron ait disparu, c'est-à-dire pendant un laps de temps qui varie de 4 à 6 jours. Alors, mais alors seulement, on fait un nouveau badigeon de goudron que l'on fait suivre d'une nouvelle période d'application de pâte de zinc ichthyolée, et ainsi de suite jusqu'à guérison.

2. Parmi les phénomènes que produit le grattage et que l'on peut étudier pour aider au diagnostic des dermatoses, il en est surtout un qui nous parait avoir dans certains cas une importance considérable et qui n'a pas cependant jusqu'ici attiré l'attention des dermatologistes: nous voulons parler du *purpura traumatique.*

Nous avons démontré que lorsqu'on explore par le grattage méthodique une papule initiale de lichen plan, une de ces papules néoplasiques caractéristiques, polygonales, d'un rouge un peu bistre, aplaties, brillant aux incidences de lumière, on voit, quand on procède avec légèreté, sans brutalité, survenir, entre le trentième et le soixantième coup de curette en moyenne, un fin purpura, qui apparait tout d'abord à la périphérie de la papule, et qui s'élargit peu à peu, puis se multiplie, à mesure que l'on donne de plus en plus de coups de curette.

Or, si l'on traite de même une plaque de lichénification pure, c'est-à-dire l'ancien lichen simplex chronique des auteurs français, ou névrodermite chronique circonscrite de Brocq et Jacquet, notre Prurit circonscrit avec lichénification, on voit que la surface malade supporte avec une merveilleuse facilité les coups de curette, et qu'il faut souvent arriver jusqu'à 200 coups de curette et même davantage pour provoquer l'apparition de purpura traumatique.

Ce fait a une réelle importance, car beaucoup de dermatologistes, surtout en Angleterre et en Amérique, confondent les variétés papuleuses du lichen simplex chronique ou Prurit circonscrit avec lichénification avec le lichen plan. Les deux affections sont cependant totalement différentes l'une de l'autre comme nature et comme histologie. Le grattage méthodique permet de les distinguer avec assez de facilité sans avoir recours à l'examen histologique. Si l'on voit paraître

rapidement, à la périphérie d'un élément, du purpura traumatique entre le trentième et le soixantième coup de curette légèrement donnés, c'est qu'il s'agit d'un lichen plan; si l'on dépasse le centième et surtout le cent cinquantième coup de curette sans qu'il se soit produit de purpura, c'est qu'il s'agit d'un lichen simplex chronique.

3. Mais c'est surtout dans les *syphilides psoriasiformes* secondaires ou tertiaires que l'apparition rapide du purpura sous l'action de la curette nous parait avoir une importance diagnostique considérable.

Quand on pratique le grattage méthodique au niveau d'une papulo-squame psoriasiforme de syphilis secondaire, voici ce que l'on constate. Les squames sèches qui recouvrent la lésion sont relativement adhérentes; elles résistent à la curette quand elle est maniée, comme on doit le faire, avec délicatesse. Elles ne s'effrittent jamais avec la même facilité que dans le psoriasis. Mais assez rapidement, *plus vite que lorsqu'il s'agit de lichen plan*, au bout du quinzième ou du trentième coup de curette, parfois même plus tôt, on voit se produire. à travers les squames, des taches punctiformes d'un rouge vif, qui ne disparaissent pas par la pression du doigt ou du compresseur, et qui sont des éléments de purpura. Dans la plupart des cas ce purpura est relativement volumineux, assez irrégulier de dimensions, notablement plus irrégulier et plus considérable de dimensions que celui que l'on observe dans le psoriasis. Il semble en outre que, quand on cesse de gratter, lorsqu'il y a déjà quelques points minuscules de purpura produits, ces points augmentent pendant quelques secondes de nombre et surtout de volume, en quelque sorte spontanément, sans qu'on ait donné de nouveaux coups de curette.

Si l'on continue ensuite à gratter avec la curette, on finit par enlever les dernières couches de squames, et l'on provoque alors de petites hémorragies. Ces hémorragies se produisent d'emblée, dès le début du grattage, si l'on a la main trop lourde, et si l'on arrache violemment les squames adhérentes; elles sont relativement abondantes, et ne ressemblent nullement au fin piqueté hémorragique du psoriasis.

Dans certains cas l'adhérence des squames et la fragilité de la dernière cuticule sont telles dans les syphilides qu'il

est presque impossible de ne pas provoquer cet accident dès les premiers coups de curette. Il suffit alors parfois de frotter ces papulo-squames avec la pulpe de l'index garni d'un protecteur en caoutchouc pour voir se produire du purpura traumatique dans les éléments éruptifs à travers les squames intactes, et, nous insistons encore sur ce fait, après avoir cessé de frotter, si l'on examine soigneusement l'élément, on voit pendant quelques secondes le purpura continuer à se produire, augmenter d'intensité sans autre nouveau traumatisme: ce purpura est en quelque sorte progressif, ce qui ne s'observe pas dans le psoriasis, du moins à un degré aussi accentué.

Certains éléments papulo-squameux de syphilis secondaire ont au contraire à leur surface des squames ou des croûtelles peu adhérentes. On les enlève facilement avec la curette. On arrive alors sur une surface lisse d'un rouge assez vif ou d'un rouge bistre, nettement néoplasique à la vue et au toucher; elle est parfois le siège d'une exosérose plus ou moins accentuée. Il semble vraiment qu'en procédant au grattage méthodique, on enlève parfois dans ces cas une dernière cuticule décollable; cependant jamais elle n'a la même netteté que dans le psoriasis: mais il est incontestable qu'on arrive à avoir, comme dans le psoriasis, une surface rouge, lisse et luisante. A partir de ce moment, l'exploration de la lésion devient fort délicate; il ne faut procéder qu'avec la plus extrême légèreté. Si, en s'inspirant de ces principes, on continue à effleurer la surface ainsi desquamée, on voit tout d'abord se produire çà et là en certains points de l'infiltrat spécifique de petits points de purpura traumatique que de nouveaux coups de curette font rapidement grossir. Cependant il peut survenir aussi tout de suite des hémorragies, mais elles sont abondantes, et ne ressemblent nullement aux hémorragies punctiformes du psoriasis. Assez souvent l'exosérose qui se produit au niveau des surfaces dépouillées de squames est légèrement teintée de rose.

Quand on explore de la même manière avec la curette des syphilides psoriasiformes circinées tertiaires, c'est-à-dire des syphilides tuberculo-squameuses circinées, on observe la même filiation de phénomènes. En grattant les placards avec soin, on enlève dans la majorité des cas quelques squames

épidermiques sèches, mais, assez rapidement, dès le dixième, le vingtième, le trentième coup de curette, à travers les couches épidermiques qui adhèrent encore, on voit se produire des taches de purpura traumatique qui s'accentuent rapidement à mesure qu'on continue à gratter; dès qu'on enlève les dernières couches d'épiderme corné, on provoque l'apparition de petites hémorragies. Mais assez souvent aussi, dès les premiers coups de curette, quel que soit le soin avec lequel on procède, on déchire le corps papillaire en soulevant une squame et l'on détermine ainsi une hémorragie relativement considérable. Dans ces cas de corps papillaire tout particulièrement friable, il existe presque toujours un processus d'exosérose fort accentué.

On sait que dans les périodes avancées de la syphilis on peut observer des éruptions psoriasiformes circinées, relativement superficielles, que nous avons désignées sous le nom de quaternaires. Elles se voient surtout chez les personnes âgées. Par leur circination, par leur superficialité, et par leur nombre, elles rappellent tout-à-fait l'aspect des psoriasis circinés. Les résultats que donne le grattage méthodique de ces lésions sont moins nets que dans les formes précédentes: le purpura traumatique que l'on produit ainsi nous a paru, dans les quelques cas que nous avons pu explorer jusqu'ici, être plus fin, plus discret que dans les syphilides psoriasiformes secondaires et tertiaires vulgaires. Mais dans ces cas nous avons presque toujours vu ce purpura traumatique se produire avant l'hémorragie punctiforme.

En somme, d'une manière générale, la filiation des phénomènes que l'on observe quand on pratique le grattage méthodique à la curette au niveau d'une syphilide psoriasiforme est la suivante:

(*a*) Ablation parfois facile, plus souvent assez difficile, de squames cornées beaucoup moins friables et beaucoup moins stratifiées que celles du psoriasis typique; (*b*) absence constante ou presque constante de la fine pellicule transparente, décollable par lambeaux de L. Duncan Bulkley; (*c*) apparition habituelle, avant que l'on ait totalement enlevé les squames épidermiques adhérentes, de points accentués, souvent irréguliers de dimensions, de purpura traumatique; (*d*) apparition

ultérieure d'hémorragies relativement assez abondantes dès que l'on a enlevé les dernières squames cornées et déchiré la dernière pellicule.

*En résumé:* Les caractères permettent dans la majorité des cas de distinguer assez facilement un élément de psoriasis typique d'un élément de syphilide psoriasiforme. *Dans le psoriasis typique* on arrive, après avoir enlevé une dernière fine pellicule décollable par lambeaux minuscules ou assez importants, sur une surface rouge, lisse, luisante, sur laquelle apparait tout d'abord un fin piqueté hémorragique: le purpura succède à ce piqueté hémorragique, parfois survient simultanément: cependant pendant les premiers jours des poussées aigues de psoriasis il est possible de déceler tout d'abord par le grattage du fin purpura au niveau des éléments de psoriasis avant que les hémorragies ne paraissent; mais ce purpura du psoriasis est toujours fin, minuscule, en quelque sorte punctiforme et bien limité.

*Dans les syphilides psoriasiformes* le grattage fait apparaître rapidement, souvent avant l'ablation totale des squames, du purpura traumatique irrégulier, relativement considérable et progressif, dans l'infiltrat spécifique; et ce n'est qu'après l'apparition de ce purpura que se produit l'hémorragie, à moins que l'on n'ait déchiré brutalement toute la couche épidermique par un coup de curette malencontreux; il faut alors procéder à une autre exploration. Il y a cependant des cas où la friabilité des tissus est si grande que l'hémorragie se produit tout de suite, mais alors elle le fait avec une facilité et une abondance que l'on n'observe pas dans le psoriasis vrai.

# ON THE VALUE OF AN ABSOLUTELY VEGETARIAN DIET IN PSORIASIS

By Dr. L. Duncan Bulkley, of New York

Although psoriasis is one of the most clearly defined and well recognized of all diseases of the skin, and has been the subject of much study, clinically and microscopically, we are still quite in the dark as to its true nature and etiology; moreover, good observers are by no means all agreed as to whether it is a local disease of the skin or one of internal origin. Certain it is that no one definite cause has yet been established.

The appearance and character of the individual lesions have time and again suggested a parasitic origin, but as yet no micro-organism has been demonstrated by which the eruption can be produced artificially; nor, on the other hand, has any one constitutional state been shown to be always productive of the eruption. Certain observers have, therefore, characterized it as a local affection of the skin itself, a misbehavior of its cellular elements, even as epithelioma is recognized as such.

But there are many facts and features of the disease which point to its not being a purely local disease of the skin, but show that it is due to some underlying constitutional state or condition, which at one time or another favors the development of the lesions on the skin. Not to lay too much stress on the clinical observations of many in regard to the connection of psoriasis with rheumatism and gout, hereditary or acquired, or the appearance of the eruption after vaccination, the exanthemata, debilitating illnesses, prolonged lactation, etc., etc., there are some peculiar features which cannot be ignored. Thus, the intermittent character of the eruption, often without treatment, shows some change in the individual

which, even on the theory of a microbic origin of the separate lesions, causes the omnipresent micro-organisms to have effect. Also, the well known proclivity of the eruption to appear at certain seasons of the year, at which we know that the diet and mode of life vary greatly, points to a systemic change or a modification of the metabolic processes favoring the eruption.

One of the most striking facts in regard to the production of the eruption of psoriasis is that relating to the subject of this paper. Almost twenty years ago, at the First International Dermatological Congress,[1] held in Paris, in a "Clinical Study and Analysis of One Thousand Cases of Psoriasis," I stated that "excessive meat-eating will also increase the disease, which will frequently yield with much greater rapidity, under the same treatment as before, when the amount of meat taken is lessened, or when it is entirely cut off," as I had observed in private cases for some years. In 1895, from a clinical study of three hundred and sixty-six cases of psoriasis in private practice,[2] I made the same statement, adding "I have a considerable number of psoriatic patients who have taken no meat, or only a very little fish and white meat of poultry, with the result of being free from the eruption for a long period of time."

In 1896 I brought the subject of "The Restriction of Meat in the Treatment of Psoriasis" before the Third International Congress of Dermatology,[3] and stated that "free indulgence in meat is very apt to aggravate greatly the eruption of psoriasis, whereas its restriction, especially the avoidance of beef and mutton, including extracts, strong soups, etc., will aid materially in its removal; furthermore, their continued avoidance will, I believe, contribute very greatly to a removal of the cause of the eruption, and assist in effecting a permanent cure of the disease. . . . I have careful notes of many cases where the improvement has been most marked as soon as the stringent diet has been rigidly observed, and also notes concerning many patients who have for several years maintained

[1] *Trans. First Internat. Cong. of Derm. and Syph.*, Paris, 1889, p. 892.
[2] *Trans. Med. Soc. State of New York*, 1895, p. 151.
[3] *Trans. Third Internat. Cong. of Derm.*, London, 1896, p. 734.

the same, with the most manifest gain as regards a recurrence of the eruption."

Following up the matter since that time, I finally stated last year,[1] 1906, at the American Medical Association, in a study of two thousand and one hundred cases of psoriasis, over five hundred of which were seen in private practice, that "for many years I have placed numerous psoriasis patients on a strictly vegetarian diet with most excellent results; and these results are corroborated by the fact that now and again, when one has broken through the regulations, he or she has reported with a recurrence of the eruption. I make the diet absolutely vegetarian, not even allowing eggs or fish, or milk as a beverage with eating; and sometimes I have even excluded coffee and tea with advantage," and of course all distilled and fermented drinks.

The bearing of the relations of an absolutely vegetarian diet to psoriasis is understandable if one watches intelligent patients in private practice, over a number of years, with careful and repeated note-taking and study of their metabolic processes; especially when this latter is effected by means of frequent and complete quantitative analysis of the urine in all possible aspects. While psoriatic patients are commonly considered to be in perfect health they will constantly be found to exhibit assimilative disturbances, especially along the line of faulty nitrogenous metabolism and diminished (or at times greatly increased) elimination of the purin products. The variations which may be observed in the urine from time to time are most striking; often varying in the same patient from a limpid, pale secretion to one of a very high specific gravity. In one instance this reached 1041 (no sugar), and an acidity, as measured volumetrically, of almost four times the normal, with 4.5 per cent. of urea, over double the normal amount.

Time does not permit of our entering upon any elaborate consideration of the physiological chemistry of nitrogenous metabolism as affected by a purely vegetable diet, especially as this is a practical paper, based on clinical facts, but very

[1] *Journ. Amer. Med. Assn.*, Nov. 17, 1906.

brief mention may be made of the scientific basis for the observations.

It has been shown that the urinary discharge of *uric acid* does not by any means correspond with the amount of ordinary nitrogenous food ingested, but that:[1]

1. Uric acid is formed in the body by the disintegration of the albuminous substances of the tissues, especially of the nuclein or nucleins; and

2. The excretion of uric acid becomes increased or diminished by all factors (diseases, medicines, poisons, etc.) which give rise to a more rapid or slower disintegration of the cellular elements of the body, and especially of the leucocytes.

Taylor[2] has demonstrated that a diet rich in nucleins, such as sweetbread, more than quadrupled the excretion of uric acid, while a heavy proteid diet hardly increased it at all; and, moreover, under an exclusively vegetable diet it was still above that found in a normal mixed diet, without coffee, while the addition of coffee more than doubled the output of uric acid. Under a carbonaceous, nitrogen-free diet, it fell to seventy-eight per cent. of normal.

It is not, therefore, the much-discussed element of *uric acid* which we have to consider, but rather the entire nitrogenous metabolism.

In the long and carefully conducted experiments of Taylor, he found that under a heavy proteid diet the total excretion of nitrogen was increased almost fifty per cent., and the amount of urea passed was also almost fifty per cent. above that excreted under a normal diet; while under a vegetable diet the nitrogen eliminated was reduced almost fifty per cent., as was also the urea; and, finally, on a purely carbonaceous, non-nitrogenous diet, the nitrogen output and the urea were not one-quarter that passed under normal diet, with or without coffee. The latter was found to more than double the amount of the purin bases, the uric acid being also more than doubled.

It is now pretty well established that in health the daily excretion of uric acid is a fairly constant quantity, depending on the formation and destruction of leucocytes; also that it

[1] LEVISON: *Uric Acid Diathesis*, etc., Engl. transl., London, 1894.

[2] TAYLOR: *Amer. Journ. Med. Sci.*, vol. cxviii., Aug., 1899, p. 141.

varies in certain diseased states, and may be increased by anything which increases the leucocytes in the blood, while in leucocythemia it has been found eight times the normal amount. Foods containing large amounts of nuclein also augment it, although ordinary proteids do not, except as they increase the leucocytes. In other words, the production of uric acid is not much affected by changes in diet.

The matter is very different, however, in regard to other outputs of nitrogen, urea, etc., of which it is stated that seventy-three per cent. of that ingested escapes by the kidneys—and the amount of nitrogen in the urine is found to vary very definitely according to the amount of nitrogenous food taken, as has been shown by many observers.

While the studies which have been made on the urine of patients with various diseases of the skin do not as yet throw the light which we could desire upon their etiology, we know enough to show that alterations in the urine, of important character, are constantly found in connection with psoriasis and some other skin affections. Among hundreds of carefully made volumetric analyses, I have found in the urine of untreated psoriatic patients a greater acidity (two, three, or even four times the normal), a higher specific gravity (1030 to 1040 being not uncommon), and increased urea (even to double the normal amount), evidences of faulty nitrogenous metabolism, or rather of an excessive intake of highly nitrogenized foods. As yet we know very little as to the effect of faulty metabolism of carbonaceous elements on the urine.

Knowing the effects attributed to errors of nitrogenous metabolism on other structures of the body, it is natural to suppose that prolonged errors of this nature would produce some injurious effect upon the skin; and working on this hypothesis for many years I am convinced by clinical observation that psoriasis has its foundation in errors in regard to the passage of nitrogenous elements into and out of the body. How far back in the system these errors of nitrogenous metabolism extend cannot be stated, for the urine is the only index as to how more occult processes are carried out. Whether Haig's view as to the retention of uric acid in the system is correct, or whether by imperfect oxidation in the tissues

of the body other irritating compounds of nitrogen are formed, need not particularly concern us. The main fact to recognize is that, probably from erroneous diet and other causes, imperfect anabolism and catabolism of the proteids take place, and in some way either excite the skin to wrong action, or render it susceptible to other causes of disease.

It would lead us still farther away from the practical purpose of this paper if we attempted at all to trace the causes or methods by which this faulty nitrogenous metabolism takes place—for indeed a good deal of it is involved in mystery. We know that the life processes of the body are carried on by oxidation, and it is quite understandable how, by a lowering of the oxygenating powers of the system, imperfect oxidation of the proteid molecules occurs. While this process of oxidation is going on all the time in every part of the organism, it is of course the blood which is the active agent, both in furnishing the requisite oxygen, in various combinations, and in carrying away in turn the more or less imperfectly oxidized products of catabolism. And it must be remembered that it is from the arterial blood current that the kidneys seize such waste products as they may be able to handle. It is recognized also that this blood current represents the results of the final efforts of many vital organs, each contributing its quota of result in the interchange of external elements with vital tissues; and also the removal of effete or waste primary elements, in various combinations, after they have accomplished their purpose in the organism.

While, therefore, I am strongly advocating an absolutely vegetarian diet in psoriasis, I wish to emphatically declare that this is only one element in the treatment of the disease —although perhaps the most important one,—and that in order to obtain the best results there is constant need of careful medical supervision, to secure the proper working of the economy in all directions, and internal and external medication are called for as necessity arises.

I know that with all that has been said in regard to the absolute avoidance of meat, many are ready to reply that some years ago exactly the opposite plan of treatment was advocated, namely, an exclusive or almost exclusive meat

diet in psoriasis. This fact has been so frequently alluded to in text-books and current literature, that it is necessary to devote a few words to it.

In 1867, Gustav Passavant of Frankfort, Germany, in an open letter to Prof. F. V. Hebra,[1] reported his own case of psoriasis of twenty-five years' standing. After trying for many years all known external and internal treatment, with but temporary benefit, he states that he was soon free from psoriasis, and an accompanying catarrh, after entering upon an almost absolute meat diet, including soups, pork, fats, cod-liver oil, milk, and bacon, and practically no vegetables or bread. He advises against any amount of vegetables, wine, beer, coffee, and tea; also spices. He cites one case of squamous eczema also relieved by this treatment.

There are a number of points in connection with this brief report which quite invalidate any importance which might be attached to it. First, Dr. Passavant does not mention if possibly he used any treatment, external or internal, in connection with the diet; then, he does not state if the improvement in his condition lasted any length of time, or if he had had any return of the eruption, either under the diet or without it. He also refers to only one other case, and that of eczema, which was benefited by this plan of treatment. Finally, Hebra,[2] to whom Dr. Passavant addressed his open letter, ridicules the claim made, some years after its publication, and, as far as I can find, there has been no subsequent corroboration in literature of the correctness of the claims of Passavant that psoriasis can be cured by a meat diet. Surely if there were any truth in it, some proof would be forthcoming in the forty years which have elapsed since its publication. On the other hand, there are abundant, though brief, allusions in literature in regard to the injurious effect of excessive meat-eating in psoriasis.

More attention has been given to this matter than is perhaps warranted, but as the statement of Passavant has so often been called up whenever the subject of diet in pso-

[1] PASSAVANT: *Archiv für Heilkunde*, 1867, p. 251.

[2] HEBRA: *Lehrbuch der Hautkrankheiten*, 2te Aufl., Bd. i., 1874, p. 352.

riasis was referred to, it was thought worth while to analyze the subject and refute the error once for all.

My personal experience in regard to the effect of diet on psoriasis extends over more than twenty years, as has been already stated.

In analyzing the notes of five hundred and sixty-five cases of psoriasis observed in private practice, I find that about one-half of them were seen in consultation or for but a short period, and, of course, many others only at intervals. But of those cases which were observed long and frequently enough to understand their true condition and note the results of treatment over a long period, I find that there were forty in whom a more or less vegetarian diet was observed, and a dozen or twenty who carried it out strictly, and from whom conclusions can be drawn.

During the earlier years the restriction was less severe, and related mainly to the abstinence from beef and mutton, and even these patients noticed a marked change in the character and severity of the eruption, and often attributed a relapse to indulgence in the prohibited articles. But of late years I have made the diet much more strict, excluding entirely all animal food, even strong soups, poultry, eggs, and fish; and I have had a number of patients for years on an absolutely vegetarian diet, only allowing butter, but no milk as a beverage, and in some cases I have excluded tea and coffee.

The effect of this cutting off the supply of animal nitrogenous food has been very remarkable and striking in many instances (a considerable amount of nitrogen is still supplied by certain vegetables, as the legumes and oatmeal). Patients continually notice the change in the color and character of the eruption, it paling and becoming less scaly, and even entirely disappearing in a few weeks, with absolutely no local treatment.

In a number of instances this diet has been given to patients who had long been under my care, even for years previously, and the patients and myself have been well able to judge of the result of this radical change in their mode of life; and we have watched with great interest the often rapid improvement

in the eruption, under precisely the same treatment as before, except that I commonly suspend local measures.

This treatment has been given to patients at all periods of life, from 9 to 78 years of age, and, as has been stated, has been carried out with varying degrees of fidelity. The note has been repeatedly made that when there has been a neglect of the dietary element, there has been a recurrence of the eruption, which again yielded rapidly when stringent measures were enforced. On the other hand, there have been a number of patients who have faithfully pursued this plan of treatment, in whom a long existing psoriasis has remained absent, and who, having become quite accustomed to the diet, say that they have lost the desire for animal food and will not touch it again. This plan of treatment has been tried on some of my patients in the New York Skin and Cancer Hospital, with evident benefit, but, naturally, it is very difficult to carry out effectually such a measure for a long time in this class of patients. In one very striking case, however, in a young woman aged 33, who had been repeatedly in the Hospital with most aggravated psoriasis, the eruption, which covered almost the entire body and assumed a general exfoliative condition, disappeared entirely under an absolutely vegetarian diet and large doses of nitric acid, with no local treatment. She remained afterwards many months in the Hospital free from eruption, and when she went out she was seen occasionally, still faithful to treatment and free from eruption.

The oldest private patient, a man 78 years of age, who had severe psoriasis all his life, and had been some years under observation, showed a very remarkable improvement as soon as he was persuaded to follow this diet, some five months ago, and old thickened patches have almost disappeared.

It is not always easy to convince patients of the value of this treatment and persuade them to adopt an absolute vegetarian diet with perfect strictness for a sufficient length of time or permanently; and it will often require no little insistence as well as intelligent aid on the part of the physician in order to effect the result desired. But after an experience with it for twenty years, I know that it can be effectually accomplished, at least in a certain proportion of intelligent

patients in private practice, and I have a number who are really enthusiastic on the subject, and have been so for many years. If from carelessness or necessary causes, as in travelling, visiting, etc., the rules of diet are transgressed, and there should be some little return of the eruption, this has yielded to a very strict observance of the dietary restrictions, with other proper treatment, better than occurs with the latter alone.

Little need be said in regard to the general subject of a vegetarian diet, for abundant experience has shown its value under many conditions of health and disease. The opinion is, I believe, gaining ground both among the medical profession and the laity, that far too much meat is eaten by those who can get it; and in London, certainly, the practice of vegetarianism is increasing, as is evidenced by the large number of well patronized restaurants which make this a specialty. These are also increasing in New York City. In my experience patients have felt remarkably well when this was rightly directed and carried out, and in numerous instances I have found distinct and steady gain in weight in the spare and loss of weight in the obese when tested repeatedly on the same scales.

Finally, I wish to emphasize the fact that while an absolutely vegetarian diet is advocated in psoriasis, I believe that it has its limitations, and must be directed with care and intelligence; but that in proper cases it can control the eruption and prevent its recurrence I am confident. I wish also again to make clear that patients with this eruption at times will require, in addition, the most varied treatment, internal and external, in order to accomplish the quickest and best results. How internal remedies act cannot yet be fully stated, but in the light of our present study they probably have their action in improving the metabolism of nitrogenous substances.

*Discussion*

Dr. H. Radcliffe-Crocker, of London, said he had listened with great interest to Dr. Bulkley's paper, which illustrated what different conclusions two observers of about equal age and experience could arrive at in regard to a disease which was extremely

common and which so frequently came under the observation of both. He was disappointed that Dr. Bulkley had not distinguished between the cases of psoriasis that began in early life and those that began after middle life. In cases of psoriasis occurring after middle life in patients with an undoubted gouty tendency, the proper restriction of the nitrogenous diet is certainly indicated, but when we came to include cases of all ages, then Dr. Crocker said he had to join issue with the reader of the paper. He had seen psoriasis in vegetarians and in butchers, and he had arrived at the conclusion that diet had very little influence upon the course of the disease. He believed, however, that anything approaching an excessive use of alcohol had an aggravating effect on the eruption. The speaker said he began his work as a dermatologist as a pupil of Dr. Tilbury Fox, with whom errors of diet were a fundamental principle, and he did not break away from the influence of that teaching until clinical facts forced him to do so. His conclusions in regard to the influence of diet upon psoriasis were totally unlike those of Dr. Bulkley. He recalled the case of a girl of 13, the daughter of a medical man, with well-marked psoriasis, whose father had assured him that she was a natural vegetarian, and that she had never eaten a piece of meat of any size in her life. A study of the age at which psoriasis first made its appearance would show that fully two-thirds of the cases had their onset before the age of 30—that is, during a stage of life when errors in metabolism were comparatively few.

Dr. Crocker also called attention to the fact that in a very large proportion of cases of psoriasis the eruption began locally in one or two regions of the body, where it remained for weeks, months, and even years. Then, under circumstances which varied in different cases, the disease began to generalize and become symmetrical, and from that time on remained symmetrical. He believed that if these initial lesions were vigorously treated, we might hope to cure the disease, but even if we failed in that, we could often succeed in wearing it down to very small proportions. The speaker said he had lived long enough to see cases of a very diffuse character, after having been under his observation for many years, gradually improve under steady, persevering treatment, sometimes medicinal and sometimes local, but always largely local, until finally the disease was reduced to very trivial proportions, and was, so to speak, driven into a corner. In some of his psoriatic patients who had remained faithful, and whom he called his "hardy annuals," the disease had been practically worn out.

He was strongly inclined to believe that psoriasis was microbic in the beginning and that it gets into the circulation, with periods of dormancy and activity. He regarded it as a self-multiplying disease, and believed that during every attack persevering treatment should be continued until every speck was removed.

Dr. Crocker said that if he got hold of a gouty patient with psoriasis, then he would regulate the diet accordingly. The same was true of dyspeptic patients, but as for the effect of diet upon psoriasis, as such, he did not regard it as an important factor in the etiology of the disease.

Prof. Theodor Veiel, Cannstatt, Württemberg, erklärte, dass er speziell auf die Empfehlungen Dr. Bulkley's hin bei seinen Patienten vegetarianische Kost empfohlen habe, dass er aber im Erfolg nicht so glücklich gewesen wie Dr. Bulkley. Er könne sich das nur dadurch erklären, dass Gicht in Süddeutschland viel seltener sei als in anderen Ländern.

Dr. Bulkley, in closing the discussion, said he was inclined to believe that psoriasis was a parasitic disease; that there was a micro-organism somewhere which developed at times, for reasons of which we were still ignorant, but primarily on account of faulty nitrogenous metabolism. The speaker said he did not see many cases of psoriasis associated with well-marked gout or rheumatism. There were a certain number of such, but not many. If one could by treatment correct the faulty metabolism due to the excess of nitrogenous elements, or prevent their accumulation, the same object would be attained, but he thought a simpler method was to cut off the supply.

Dr. Bulkley said he was fully in accord with Dr. Crocker that this method of treatment was not applicable to every case. In every case, also, we needed other treatment as well. It would be foolish to simply limit the treatment to a vegetarian diet. These patients must be watched very carefully. The urinary output must be investigated; the patients must have proper air, etc., but the main factor was to cut off that kind of food which produced this condition. In certain cases he had continued the diet for over ten years.

*End of First Day*

## SECOND DAY, TUESDAY, SEPTEMBER 10TH

### CLINICAL DEMONSTRATION OF CASES, 9–11 A.M.

#### A Case of Acanthosis Nigricans

PRESENTED BY DR. L. DUNCAN BULKLEY, OF NEW YORK

E. L., age seven years, presented herself at the dispensary for treatment Aug. 23, 1907. No family or previous personal history could be obtained beyond the fact that the lesions present dated back four years. The child exhibited an ichthyotic-like condition of areas of the skin. Between them the cutis was almost normal, the areas themselves being pretty generally distributed over the whole body. Their margins were sharply defined with a gyrate configuration, being in some places confluent and in other places constituting separate islands of layers of smaller size. The condition of the separate patches might be described as a verrucous-like hypertrophy of the superficial layers of the integument, presenting the dry rough scaly sensation of ichthyosis. The color of the patches varied from light *café au lait* to a dark brown. The most marked discoloration was in the axillary patches. In general, the color was darker in the portions of the body most affected. These were the axillæ, the outer and inner surface of the upper arms, the extensor surface of the forearms, the outer surface of the pelvis and hips, and the outer surface of the thighs and lower legs.

A portion of one of the affected patches near the axilla was removed for examination. Section showed a general lengthening of the papillæ, some increase in their height and a marked hypertrophy of the stratum corneum. The dry flattened scales of the latter remained adherent to the underlying stratum lucidum so as to form a very thick layer. The stratum granulosum presented a distinct pigmentation so that the color of the lesions could be seen to be definitely due to a deposit of pigment granules in this layer. The rete

Malpighii and the corium presented no particular deviation from the normal.

Dr. Henry W. Stelwagon, of Philadelphia, said he was inclined to disagree with Dr. Bulkley's diagnosis of acanthosis nigricans. From the age of the patient, the absence of involvement of the mucous membranes, and the lack of any evidence of internal or visceral disease he was rather inclined to look upon it as a case of ichthyosis. As he recalled it, acanthosis usually occurred in middle or advanced life. He would, therefore, make the diagnosis of ichthyosis hystrix.

Prof. Theodor Veiel, of Cannstatt, Württemberg, said he had shown at Heidelberg a case quite similar to that of Dr. Bulkley's, but the lesions in that case were confined to one half of the body. The case was no doubt one of nævus, and it was a well-known fact that nævi very often appeared after birth. The speaker said that he was inclined to regard Dr. Bulkley's case as one of nævus rather than acanthosis nigricans.

### A Case of Rhinoscleroma Treated with the X-Rays

Presented by Dr. Samuel Stern, of New York

The patient was treated by him at the clinic of Dr. Lustgarten at the Mt. Sinai Hospital. She was a Russian, fifty-three years old. The lesion first began fifteen years ago. X-ray treatment was begun on June 1, 1906. At that time her nose was very much enlarged, there were large extranasal tumors on both sides of the nostrils reaching down almost to the upper lip. The nose was of a hard ivory consistency and both nostrils were occluded. She had a number of operations without any result. Up to date the patient had fifty treatments beginning with three times a week, five minutes' duration each with a fairly high vacuum tube, then gradually diminished to twice and once a week. Improvement was very rapid, beginning after the first few treatments, the patient being practically well when shown.

### A Case of Blastomycosis in a Negro

Presented by Dr. George Henry Fox, of New York

Man twenty-nine years old; single; U. S.; laborer.

Mother and brother died of consumption. Patient had always lived in Virginia till five years ago when he came to

New York. Up to the beginning of present illness, he had always been well. First noticed a "pimple" on buttock which had become a scaly patch the size of a dime within a month. A year and a half later the lesion had attained the size of a dollar and was an open sore. It remained stationary till he came to New York. He was treated at Presbyterian Hospital by pills and drops for six months and given mixed treatment at the Skin and Cancer Hospital. Improvement but no cure resulted.

Three months ago section made by Dr. Jagle showed typical histological structure of blastomycosis and the presence of blastomycetes in section. The lesion then presented a large horseshoe-shaped ulceration with vegetating borders and purulent discharge. Blastomycetes were found very sparingly in hanging drop preparations. Plate cultures were all contaminated. Subcutaneous inoculations of guinea pigs produced abscesses containing staphylococci only; no blastomycetes. X-ray treatment for the past four months had produced great improvement. A portion of the lesion for purposes of future examination and demonstration at the Congress was not rayed. The remaining area showed a slowly healing, bean-shaped shallow ulcer, four inches in length.

### A Case of Urticaria Pigmentosa of Thirty-three Years' Duration

PRESENTED BY DR. PRINCE A. MORROW, OF NEW YORK

The patient, now thirty-three years of age, came under Dr. Morrow's observation in July, 1876. He was then nearly two years of age and the eruption had existed since early infancy.

This was the first case of urticaria pigmentosa recognized in this country and the fourth recorded in medical literature. Its interest lay in the prolonged persistence of eruption and its evolutionary mode, as shown in the various modifications in the color, configuration, and general objective characters of the lesions, which were detailed in the report of the case (*Archives of Dermatology*, 1879, and *Journ. Cutaneous and Genito-Urinary Diseases*, Nov., 1895).

When the case first came under observation the eruption consisted of variously sized circular pigmented spots of a

yellowish or brownish tint, generally distributed, but most abundant over the back and flexures of the joints, and interspersed with larger protuberant lesions, nodular in character. Within the next year or two there was an obvious increase in the number of the lesions, until the eruption became practically universal. With the exception of a limited area of healthy skin at the root of the nose and over the malar prominences, the eruption covered the entire surface of the body; the palms and soles, and even the eyelids were profusely studded; the mucous membrane of the palate and fauces was also involved.

In March, 1895, the period of the second report, it was found that marked retrogressive changes had taken place in the eruption. The pigmented spots had faded from the face, hands and feet, the back of the scalp, the mucous surfaces, and the more exposed parts of the body generally. The nodular lesions had entirely disappeared, and most of the spots—especially upon the back and sides of the chest—had lost their circular configuration and become elliptical or elongated in shape.

The patient had always been the subject of factitious urticaria, exhibiting most characteristically the phenomenon of dermographism. The pigmented lesions exhibited a much more marked susceptibility to this urticarial reaction than the healthy intervening skin. His general health had not been appreciably affected by the cutaneous trouble.

### A Case of Multiple Idiopathic Hemorrhagic Sarcoma (Kaposi)

(From Dr. Lustgarten's Clinic.)

Presented by Dr. Adelbert B. Berk, of New York

N. F., fifty-eight years old, married, had seven children, all living and well. Patient himself was in good health, when, while still in Russia, fifteen years ago, the present skin affection began with swelling of both feet, followed by successive eruptions of various sized more or less prominent, bluish-red, semi-hard, irregularly disseminated nodules. Gradually the process advanced upward to the inguinal region on both limbs, which became diffusely affected and increased in size to shapeless, rigid, elephantiasis-like extremities, with

greatly thickened integument, subject to attacks of dermatitis and eczema. Walking was difficult. The loins, vola manus, and lower arms also participated in the process. The successive eruptions were associated with intense lancinating deep pain. Under prolonged arsenic injections and also persevering X-Ray treatment, the condition improved perceptibly.

Dr. George Henry Fox, of New York, said the case shown by Dr. Berk had been presented by him at a meeting of the American Dermatological Association under the same diagnosis of pigmented sarcoma, but at that time, which was two or three years ago, there was a resistant eczema of one leg which had since improved.

### A Case of Mycosis Fungoides

Presented by Dr. Samuel Stern, of New York

The patient was treated by him at the clinic of Dr. Lustgarten at the Mt. Sinai Hospital. He was a Russian, forty-four years old. The lesions originally began nine years ago, and were scattered over the entire body, including the face. He had lost forty pounds and was in bad physical condition. About one hundred arsenic injections had produced no effect. X-ray treatment was begun in November, 1903, at the rate of three times a week on an average of twenty minutes' duration each. The subjective symptoms yielded very promptly. Treatment had been continued up to date. The patient was perfectly well while under treatment but lesions promptly recurred if it was discontinued for a while. New ones yielded readily, and it appeared as if the patient could be kept well indefinitely with the X-ray. He had had in all probably four hundred exposures.

### A Case for Diagnosis

Presented by Dr. Edward P. McGavock, of New York

Mr. W., aged fifty-seven. Previous history negative.

In 1898 a small hard painful swelling formed behind the left ear, was incised and exuded a small quantity of pus. Shortly after a slowly spreading, ulcerating process developed, with raised reddish borders, scaling and numerous miliary abscesses; at times intensely pruritic. It healed leaving in its path a smooth glistening superficial scar, devoid of hair and showing no tendency to return in old site.

In 1902 the greater part of the left side of head was involved and a portion of side of neck. The diagnosis of blastomycosis was suggested, and he was treated with a 50% alcoholic solution of resorcin externally and iodoform pills internally. After five months the pills were discontinued and a saturated solution of potassium iodide substituted in increasing doses up to 60 m. t. i. d. In two months all had healed except an area the size of a dime over the larynx. This remained quiescent about two months, then became active, the disease advancing along the neck below and behind the right ear and down to the sternal notch. During the second exacerbation the treatment was vigorously continued without effect.

X-rays were then applied, medium tubes, two to five minutes, four to eight inches. He had fourteen exposures covering a period of three months, at the end of which time only a trace of the affection was left. Three weeks later a severe dermatitis developed. The disease then reappeared at several points and most pronouncedly where the dermatitis was greatest. Numerous cultures were made on glucose, glycerine, and plain agar and bouillon, but only staphylococci and streptococci were obtained. Smears of pus likewise only revealed Gram positive cocci.

Smears and tissue both were examined for blastomycetes but without result.

Sections of the tissue showed epidermic hyperplasia with small abscesses. In the corium there was a diffuse infiltration of lymphocytes, polynuclear leucocytes, and plasma cells. No giant cells were present.

Prof. Erich Hoffman, of Berlin, referred to a case which was somewhat similar to the one shown by Dr. McGavock, but the scar involved both sides of the head and was symmetrical. The case was regarded as one of ulerythema sycosiforme (Unna).

### A Case of Adenoma Sebaceum

Presented by Dr. Charles T. Dade, of New York

A young girl aged fourteen, imbecile and an epileptic, remarkably well developed physically. Face over middle two-thirds presented the characteristic crimson nodules with

telangiectic vessels on and around them—more marked along the naso-labial folds. Lesions appeared shortly after birth and have gradually increased in number and size. Over scalp, neck, and upper part of body were the associated small fibromata, warty growths, and pigmentation. One of the fibromata on the scalp was the size of a five-cent piece. The texture of her skin was coarse and greasy.

### A Case of Endarteritis Luetica

(From Dr. Lustgarten's Clinic)

Presented by Dr. Adelbert B. Berk, of New York

A. K., thirty years old, married six years, two children. Parents, brothers, and sisters living. No sickness till three years ago, when the middle finger on his right hand gave him violent pain, getting worse on exposure to cold weather. In about two months a gangrenous sore developed, with no tendency to healing; the end phalanx was enucleated after six months' unsuccessful treatment. The following winter the middle finger of the left hand became sore and at the same time the fourth finger on the right hand became livid and cold. He then entered the hospital for three weeks, received specific treatment, and improved perceptibly. Last winter the toes on his left foot became swollen, bluish, cold, and painful, and gradually gangrene of four toes developed. He was taken to some hospital and amputation of the lower third of the leg was performed. The flap became gangrenous and broke down. Healing took place by slow granulations.

The pulse in both radials at time of presentation could hardly be felt, though after the first specific treatment the stagnant circulation in the fingers was fully restored.

### A Case of Pityriasis Rubra of Hebra

Presented by Dr. George Henry Fox, of New York

Girl, twelve years old; school; born in Scotland.

She had scarlet fever when three years old. Seven years ago she first noticed that her palms were becoming rough. Later an eruption appeared upon the forehead, face, and rest of the body. It lasted about eight months and disappeared entirely. Two years later the eruption appeared again and within one month had become universal. Since then there

had been a marked improvement on several occasions, although the eruption has never disappeared completely. Her general health was fair.

The skin was not thickened but covered mostly with flakes of epidermis adherent in the central portion.

PROF. ERICH HOFFMANN, of Berlin, said the patient presented by Dr. Fox showed distinct areas of exfoliation, and he was inclined to regard the case as one of dermatitis secondary to psoriasis rather than one of pityriasis rubra.

DR. H. RADCLIFFE-CROCKER, of London, said he regarded the case shown by Dr. Fox as one of exfoliative dermatitis; whether secondary to psoriasis or not depended on the history. He did not think that the duration of the eruption or the age of the patient negatived that diagnosis.

DR. RALPH WILLIAMS, of Los Angeles, said that in two cases of pityriasis rubra that had come under his observation the patients complained of extreme cold, and the skin had a more purplish hue than in the case shown by Dr. Fox. The child shown to-day stated that she formerly suffered from cold, but not now. She gave no history of having had any of the typical lesions of psoriasis.

DR. EDWARD H. SHIELDS, of Cincinnati, said that he had seen several cases of pityriasis rubra; all had the fine scale which is typical of this disease; the skin was pale, thin, and quite tight. There was no evidence of inflammation as seen in this case. During the time one of the patients was under his care, he always complained of being cold, even in warm weather. The case ended fatally after being under treatment for a year.

### A Case of Pityriasis Rubra Pilaris

(FROM DR. LUSTGARTEN'S CLINIC)

PRESENTED BY DR. ADELBERT B. BERK, OF NEW YORK

B. L., born in U. S. 1900.

Family history negative. Child had had measles and pertussis when three years old. Present illness began at nine months of age as a dry, gooseflesh-like roughening of the slightly reddened skin on the extensor surfaces of extremities. No subjective symptoms for two years, when the affected areas extended and were accompanied by itching,

chilliness, and dryness even in the summer. Anæmia and diminished liveliness followed this. Present state: Physical examination negative except cutaneous lesions. Blood and urine normal. The cheeks, forehead, ears, and neck showed reddish-yellow, irregularly shaped patches of closely aggregated, dry, minute, and elevated papules with a bran-like scaly substance of a yellowish hue. The follicles of the skin were rather enlarged and plugged by scaly cones. On both arms and legs, especially on the dorsal surfaces of the phalanges, were partly discrete, partly confluent, yellowish white areas raised above the level of the integument with enclosures of normal skin here and there. The follicular horny plugs were especially marked under the knee-caps and over the fingers. Hair and nails were normal. Treatment consisted of injections of three minims of a ten per cent. atoxyl solution and externally one-half per cent. salicyl. of lanolin, under which patient was improving.

Prof. Theodor Veiel, of Cannstatt, Württemberg, referred to a case similar to the one shown by Dr. Berk which he had seen at Stuttgart. In that instance, the disease began in childhood. He regarded the case as one of ichthyosis papillaris. The condition was incurable, so far as his experience went.

Prof. Erich Hoffmann, of Berlin, thought the case shown by Dr. Berk was one of psoriasis of the follicular type.

### A Case of Lenticular Carcinoma and Carcinomatous Lymphangitis

Presented by Dr. J. A. Fordyce, of New York

Mrs. C., aged twenty-eight, married, four children. Previous history: For nine years she had had trouble with her right breast, following an abscess after the birth of her first child. Small cutaneous lesions developed nine months ago, first around nipple and gradually spreading.

When shown, the patient was in the eighth month of gestation. She had a hard tumor of both breasts, the nipple of the right one being markedly retracted and of the left only slightly. Multiple lenticular nodules, pin-head to split-pea in size, were situated in the skin covering both mammæ: some were eroded and discharging a serous fluid, others were red and dry. Under the breast they were con-

fluent, forming moist patches. There were also large erythematous areas over the right side of trunk and upper part of right arm with a distinct unilateral distribution—a carcinomatous lymphangitis. In places there was a slight infiltration.

Microscopical examination confirmed the diagnosis.

**A Case of Luetic Infection with Symmetrical Cutaneous Atrophy**

PRESENTED BY DR. J. A. FORDYCE, OF NEW YORK

E. E., aged forty-three, Swedish. The affection began in 1893 on the back of the left hand with persistent redness. Later on the elbows, ankles, and knees became affected in the same manner. Bullæ formed, ruptured, and discharged a serous fluid. Pain and swelling would remain for a few days and then disappear for two or three weeks. The pain was more pronounced along the anterior surfaces of the tibiæ. In addition, there were patches of atrophic skin surrounded by zones of pigmentation and dilated capillaries. The eruption was absolutely symmetrical.

In 1898 she suffered from a left-sided hemiplegia and slowly regained the use of her arm and leg. A diagnosis of syphilitic brain lesion was made. Some months later a typical serpiginous syphilide developed on the inner aspect of the right forearm, which yielded slowly under the use of mercury and iodides for more than a year. At the end of that time it was noted that the atrophy had not progressed beyond the regions first invaded and she was in much better general health.

Microscopically, the lesion was found to be an inflammatory one primarily, with endarteritis and thrombosis of the vessels, the changes in the latter being probably the original seat of the trouble.

**A Case of Multiple Telangiectases, with Spontaneous Hemorrhage; Bleeding Stigmata.**

PRESENTED BY DR. WILLIAM S. GOTTHEIL, OF NEW YORK

Harry D., forty, Russian, first seen August 12, 1907. Complained of periodic, spontaneous hemorrhages from the nose, tongue, and lips, which he had had as long as he could remember, and for which he had been under treatment both

in Europe and here. He was not a hemophilic in the ordinary sense of that term; cuts did not bleed excessively and healed readily; had had a tooth extracted two weeks before without much bleeding. He stated that his bleeding was of two distinct kinds; from the nose it occurred as a slow trickling, lasting perhaps ten or fifteen minutes; from the visible lesions of the tongue and lips, to be described later, it came as a sudden projectile spurt, sometimes reaching out a foot or two if on the lips or if his mouth was open, and stopping spontaneously in two or three minutes. He was perfectly sure that these hemorrhages had no relation to injuries, or to mastication, picking the teeth or nose, etc. The hemorrhages came on at entirely irregular intervals; there was sometimes only one a week, and sometimes he had several in one day. Latterly they had been getting more frequent.

Examination—Nasal mucosa, and that of the pharynx and gums slightly congested only. Tongue and lips showed a number of minute, bright red spots, pin-head and less in size, looking like small angiomata. These, the patient stated, were permanent; and they had certainly not changed from the time of his first examination to that of presentation.

Family history was of interest, though he did not know the facts as to his grandparents on either side, or as much as might be expected of his more immediate relatives.

Parents—Father was not a bleeder. Mother had "spots" on lips and was said to have died of hemorrhage twenty-seven years ago.

Brothers—Had four, all living; three, aged fifty-five, fifty, and forty-eight, bleeders; one, aged forty, was immune. All had hemorrhages from the nose, but no "spots" in or bleeding from the mouth.

Sisters—Two; one was a bleeder, like the brothers.

Children—Five; two were bleeders from the nose, like his brothers.

Nephews and nieces—Exact records were not attainable. Eldest brother had eight children, some of them nose bleeders; the youngest had two children, immune. Sisters, both married, had as yet no children.

Altogether, out of about thirty members of this family,

at least ten are or have been bleeders. None, however, with the exception of the patient and his mother, had shown the red spots on the mucosæ with the visible hemorrhages.

Treatment had been with the fluid extract of ergot exclusively; the patient had been for some time taking thirty drops three times a day. Though given as a placebo, he claimed that the spontaneous hemorrhage had become less and less till now he had comparatively little of it.

**A Case of Parapsoriasis; Type Pityriasis in Patches**

PRESENTED BY DR. WILLIAM B. TRIMBLE, OF NEW YORK

Woman, aet. twenty-six; Polish.

Patient claimed to have been a "sickly child," having had practically all the diseases of childhood, the most noteworthy being measles and scarlet fever. She came to this country when nineteen and soon after that time suffered from suppression of the menses; this lasted about six months, during which period, the disease first made its appearance. When shown before the Congress her eruption was almost universal, excepting the face and upper part of the back. On the chest, back, arms, and forearms it occurred in ill-defined, non-infiltrated patches, varying in size from a pea to a silver quarter. They were dull pink at the periphery, with a brownish tendency toward the centre; the patches were apparently broken up and coalescing in places; these mingled with areas of healthy skin, giving it a mottled appearance. The *ensemble* was pinkish-yellow to purple in some places. This purplish hue was marked on the lower extremities, where practically no healthy skin existed. The condition here greatly resembled ichthyosis, with the exception of the color. The chest plaques were somewhat like those of pityriasis rosea. The lesions were covered with fine furfuraceous scales, which left no bleeding points upon removal. The scaling was more marked on the lower extremities, the disease being much older in these regions. One palm exhibited a tendency to scale slightly, also the soles. The nails were unaffected, and there was practically no itching.

Pathology—Horny layer slightly increased in thickness, nuclei retained; granular layer present, but in one or two

places it was absent or much thinner and the parakeratosis over these points was more marked. Mild perivascular infiltration in upper part of corium was composed mainly of lymphocytes.

DR. H. HALLOPEAU, of Paris, regarded the case as an abnormal form of psoriasis.

### A Case of Erythema Induratum

PRESENTED BY DR. J. A. FORDYCE, OF NEW YORK

Girl, aged eleven, U. S. Her father died of tuberculosis. Her mother, although she claimed to be well, looked very delicate. The patient had had measles and varicella. She was well nourished and complained only of the skin affection. The present eruption began nine months ago on her right leg as small deep-seated cutaneous nodules which gradually extended to the surface and became necrotic in the centre. In addition to the closed and open discrete lesions, she showed confluent ulcerated areas and scars. Her left leg had been similarly affected as the right one a year previously.

DR. H. HALLOPEAU, of Paris, agreed with Dr. Fordyce that the case was one of erythema induratum. He regarded it as belonging to the tuberculide group.

THE REGULAR SESSION OF THE CONGRESS WAS CALLED TO ORDER AT 11 A.M.

DR. H. RADCLIFFE-CROCKER, of London, Vice-President, in the Chair.

# THE PATHOLOGY OF THE BROWN-TAIL MOTH DERMATITIS

BY DR. E. E. TYZZER, OF BOSTON

The exact time and manner of the introduction of the brown-tail moth into this country is unknown, but large numbers of them were noted in 1897 in a suburb of Boston. This insect feeds upon a variety of trees, but the foliage of certain fruit trees such as the pear and the plum is especially preferred. The eggs are deposited by the moth early in July, and the young caterpillars, which emerge within a few weeks, form colonies which are usually situated at the ends of twigs. They grow but little for the rest of the season, but devote nearly all their energy to the spinning of nests in which the colony is to pass the winter. With the opening of the buds in the spring the tiny caterpillars emerge and subsequently grow rapidly with a corresponding destruction of the foliage. The caterpillars attain their growth sometime in June, spinning a loose cocoon and go into the pupa stage. The moths emerge in a few weeks and both male and female are free-flying. There is a tuft of thick brown fur on the tails of the moths, most marked on the females. This brown fur is deposited about the eggs as they are laid on the under surface of leaves.

The irritating properties of this and other allied species have long been known to entomologists. Perhaps the most notable example of these "stinging" larvæ is Cnethocampa pityocampa, the processionary caterpillar of Europe.

Attention was first called to the occurrence of the brown-

tail moth dermatitis in this country by Dr. J. C. White in June, 1901. Patients in most cases gave a history of the removal of a caterpillar from the parts affected prior to the appearance of the eruption.

In the investigation of the nature of this peculiar skin eruption it has been found that the lesions are produced by minute barbed hairs, the so-called nettling hairs, which develop on the caterpillars. These nettling hairs are of the form of straight, tapering, needle-pointed shafts possessing three rows of recurrent barbs. They vary from .07 to .02 millimetres in length and are quite slender. They possess a thin chitinous wall and a granular interior. These hairs appear upon the caterpillar very early in its development, but are much more numerous after the caterpillar has attained its growth. They enter into the structure of the cocoon and they are also numerous upon the moths, so that practically all stages of this insect are poisonous. There is no evidence, however, that the nettling hairs develop upon the moth. The nettling hairs are capable of producing irritation even after being kept for long periods of time, and dermatitis has often been produced by handling cocoons and nests several years old. This has suggested that the action of these hairs was purely mechanical, and in order to determine this point various mechanical agents such as powdered glass wool and the barbed hairs of other caterpillars were rubbed into the skin. In some instances redness and slight soreness were produced but nothing of the nature of an urticaria.

At this time it was found that a peculiar reaction takes place when nettling hairs are mingled with a drop of blood between a slide and cover glass.

The rouleaux of red blood corpuscles break down, the corpuscles become coarsely crenated, the crenations are then transformed into slender spines, and finally the corpuscles become spherical. The reaction invariably begins about the points of the nettling hairs, except when they are broken, when it takes place at the point of fracture. This process does not go on to hemolysis. This reaction with the red blood corpuscles suggested that there might be a chemical irritant carried by the nettling hairs. The effect of heat was tried

upon nettling hairs both dry and suspended in fluids. After heating with dry heat one hour at 115° C. they failed to produce any irritation when rubbed into the skin, and failed to react with the red blood corpuscles. The structural integrity of the nettling hairs is not destroyed even when heated to 150° C.

On boiling the nettling hairs in pyridin, which boils at 106 to 108° C., they retain their irritating properties and still react with red corpuscles. However, on heating them in glycerine at 115° C. their activity is destroyed. Thus it has been found that the reaction of the nettling hairs with the red blood corpuscles furnishes an index of their toxicity, and after the above experiments it seems probable that the irritation is due to a chemical irritant conveyed by the nettling hairs.

The next step was to determine the solubility of this substance. Various reagents were used both at room temperature and heated. The hairs remain active after being treated with alcohol, chloroform, ether, and pyridin. They become inactive when heated in glycerine to 115° C., but as this is the temperature at which the substance was destroyed by dry heat, it does not appear to be soluble in glycerine. The nettling hairs also remain active after treatment with dilute acids.

In distilled water nettling hairs remain active for long periods of time, but if the water is heated to 60° C. the nettling hairs are at once inactivated, so that the irritating substance appears to be soluble in water at this temperature. It is also found to be soluble in dilute alkalies at room temperature. I have been unable thus far to obtain material in sufficient amount to work with the irritating substance in solution.

The pathological processes produced by the nettling hairs of the brown-tail moth have been studied in both human beings and lower animals. There are two types of dermatitis, the severe type in which the lesions are confluent and the inflammatory reaction severe, and the other milder type in which the small urticarial-like lesions are scattered. The former is usually produced by actual contact with caterpillars, the latter is produced by the nettling hairs which may lodge accidentally upon the surface of the skin. They undoubtedly [illegible] about and often lodge upon underclothes as they [illegible]

*Discussion*

Dr. James C. White, of Boston, said that to the residents of New England this question of the brown-tail moth was a very practical and important one, because in that section of the country these caterpillars had destroyed miles and miles of vegetation, they had ruined many trees, and had become a veritable pest. There was apparently no limitation to the destructive work of these insects and the particular one described by Dr. Tyzzer was capable of producing a well-marked and wide-spread dermatitis.

## BRIEF NOTES ON VARIOUS TOPICS

By Jonathan Hutchinson, F.R.S., LL.D., London

Among the subjects which have especially claimed my attention during the last few years I may venture to mention the following:

*Lichen Scrofulosorum and Darier's Dermatosis*

Cases have from time to time come under notice which seem to imply that we ought to much widen our conception of what we mean by "lichen scrofulosorum." Hebra's original description and plates included cases of much greater severity and less easy curability than those to which in English practice that diagnosis is at present carefully restricted. It is not wise, nor is it consistent with clinical truth, to construct definitions which exclude all complicated cases or those of aberrant severity. The scrofulous affections of the pilo-sebaceous system of the skin are by no means always pure "lichens" nor do they always tend to disappear unless very efficient treatment is adopted. The Vienna school has long recognized this, and complications with acne, eczema, and sycosis are I think quite correctly recognized among those of "lichen scrofulosorum." On this point Kaposi's *Hand-Atlas* gives useful information. The malady which I would especially desire now to add to this category is that which has become known as Darier's dermatosis. The careful examination of two well-marked examples of this malady, in both of which the so-called coccidia were abundantly present, convinced me that they were only aggravated and long neglected

cases of lichen scrofulosorum. These cases are illustrated and the question discussed (by myself) in a recent fasciculus of the *New Sydenham Society's Clinical Atlas*.

*On Insect Attacks as Causing Eruptions*

The effects resulting either immediately or remotely from the attacks of insects have I think been less carefully recognized than they deserve. Almost all the acute and very irritable eruptions commonly known by the name of "lichen urticatus" or some similar one are, I feel confident, almost always due to flea bites, while those which result in the chronic condition known as "urticaria pigmentosa" are in parallel relationship with those of the bedbug. It is certainly a mistake to imagine that the local effects of insect punctures are always transitory. These effects vary within very wide limits indeed, in connection with the proclivities of the patient. Another point of great importance is that these attacking insects manifest very marked aptitudes of selective preference. Fleas will attack one child in a family and avoid all the rest and it is the same with bugs, gnats, and flies. The character and duration of the irritation evolved will vary with the species of insect and, it may possibly be, also with the purposes for which its proboscis has just previously been used. Still more will they vary with the susceptibilities and proclivities of the victim. A flea may cause in one person only a minute spot of erythema, in another a large urticarious wheal, and in a third a vesicle or even a bulla which might be regarded as "pemphigus."

Inasmuch as we seldom or never get any help from direct questions put to the mother or nurse it is well to remember certain rules which will usually guide us right in diagnosis.

1st. Is the eruption one which, like urticaria pigmentosa, occurs almost solely amongst the poor?

2d. Does the eruption come out in crops and are the first crops usually local only?

3d. Are the first crops often or usually observed after sleep?

4th. Have the attacks been observed after change of home?

5th. Is the patient a child or young person?

6th. Is any family proclivity known?

7th. Does the liability to fresh eruptions cease if the patient be taken into a clean hospital, or on change of place of residence?

As a rule, the liability to suffer severely from insects diminishes as age advances and often comes practically to an end. The consequences of insect irritation may, however, last long after we have gotten rid of the original cause. A pruriginous state of skin may become established by frequent recurrences and may last a lifetime.

Careful investigation in the direction which is now suggested would, I feel confident, result in placing in one category at least a dozen eruptions which have in our systematic works received different names. It would greatly simplify matters and save the waste of much useless ingenuity in diagnostic description. (See *New Sydenham Society's Atlas* for 1903, 4 and 5.)

### *Chancres from Flea Bites*

I have seen two very definite cases in which primary syphilitic sores were caused on the leg by fleas obtained in omnibuses, and several others in which this mode of infection was suspected. In the tropics the form of syphilis vulgarly called "yaws" is probably almost always transferred by either fleas or flies.

### *Yaws a Form of Syphilis*

I believe it is now generally accepted that the diseases which have been named yaws, parangi, tropical frambœsia, sibbeus, morula, etc., are nothing but variants of syphilis. Usually they result from non-venereal or erratic chancres, but often the primary sore is on the genitals. They are curable by the remedies for syphilis and the alleged exceptions to the rule that the one prevents the other are exceedingly few. It cannot even be admitted that they constitute well characterized varieties of syphilis, for it is clear that in the best characterized forms of each they are transmittable; that typical yaws may occur from contagion from typical syphilis

and vice versa. Tropical framboesia is by no means exclusively tropical, and where it is most prevalent a large majority of its associated forms do not depart from the more ordinary ones of syphilis. There are all gradations between the two. It is clear that their supposed distinctions result from race, climate, and idiosyncrasy separately or in combination.

### *Lymphangioma or Lupus Lymphaticus?*

Many years ago when I first described the skin affection which has since been known as lymphangioma I ventured to name it "lupus lymphaticus." The name was intended to imply the belief that it was in the same sort of relationship to the tubercle bacillus that the other forms of lupus are; its peculiarities depending upon those of the tissue attacked. It is locally infective, remains local, but spreads serpiginously and produces satellites and leaves scars. It occurs chiefly in the young and in those often of tuberculous families. I have recently seen two examples of it in association with lupus vulgaris and one in which two or three years previously glands had been excised from the child's neck, in which the bacillus had been recognized beyond doubt. I am inclined to adhere to my original name as being the most appropriate of those which have been proposed. I should like, however, to modify it so as to include vascular structures, since it undoubtedly often attacks nævoid tissues and is always attended by venous as well as lymph dilatations. The generic term lupus should be resolutely retained, since it is the key to the more important characteristics of the disease.

### *Melanotic Lentigo of the Lips and Mouth*

The topic the most nearly approaching to novelty which has recently claimed my interest is that to which the above name refers. It consists in the formation on the lips and adjacent skin and inside the mouth on the gums and palate of discrete spots or patches of deep brown or jet-black tint. They are sometimes associated with conspicuous brown freckles in the face, whilst inside the mouth they much resemble

the markings on a dog's lips and gums. I have now seen seven or eight good examples of this affection. It is not often noticed at birth but usually in early childhood. It may, however, develop *de novo* in adult life. Once I have seen it in twins and once in a brother and sister of nearly the same age. I have not seen it in association with xeroderma pigmentosum (better lentigo juvenilis maligna) and only in one instance have malignant processes (melanotic) followed. It is I think clearly in close relationship with the xeroderma pigmentosum and like it prone to become a matter of family inheritance. A portrait of the cases, which occurred in twin sisters, was published ten years ago. One of the twins has since died. In the survivor the conditions now present are almost exactly as they were. At the recent meeting of the British Medical Association at Exeter I exhibited portraits from three other cases.

## IDIOPATHIC MULTIPLE HEMORRHAGIC SARCOMA (KAPOSI)

By Dr. M. B. Hartzell, of Philadelphia

In 1872 Kaposi[1] first called attention to an unusual and remarkable affection of the skin characterized by the occurrence of deeply pigmented infiltrated patches and small tumors, situated almost invariably on the extremities, followed after several years by visceral metastases and death, for which he proposed the name "idiopathic multiple pigmented sarcoma," a name which he, twenty years later, changed to idiopathic multiple hemorrhagic sarcoma, as being more accurately descriptive of the disease. At the time of this first communication he had seen but five cases, but this number had increased to twenty-five up to the time of the publication of the last edition of his well-known treatise on diseases of the skin. He regarded the malady as a typical, although special and peculiar, form of round-celled sarcoma, with the occasional occurrence of characteristic spindle cells.

[1] *Archiv f. Dermatologie u. Syphilis*, Bd. iv., 1872.

Soon after the appearance of Kaposi's paper other observers began to report similar cases, and the list has steadily though slowly grown, until the number of recorded cases is now something over one hundred. Although the affection is a relatively rare one, most of those who have written about it having seen but a small number of cases, yet one observer, De Amicis,[1] reports having seen more than fifty, by far the largest number observed by any single individual. While the affection seems to be peculiar to no country or race, the great majority of the cases on record have been reported by European observers, and fully one-half of these from the northern provinces of Italy. The number of cases reported in America is extremely small, and some of these occurred in foreign-born. For this reason, among others, I have thought it might be worth while to add a new and typical case of this very remarkable disease to the list of cases occurring in native-born Americans.

S. M., sixty-nine years old, a travelling salesman by occupation, in excellent general health, came under my observation in January of this year, seeking advice for an affection of the legs which presented the following features: On the dorsum of the left foot and the anterior surface of the leg were numerous round, oval, and irregularly-shaped, slightly elevated, or on a level with the healthy skin, very dark-brown and slate-colored, for the most part smooth, but in places slightly scaly, firm patches. On the calf the disease consisted of many pea- to hazel-nut-sized, confluent firm nodules similar in color to the patches on the anterior surface of the leg, forming a large uneven patch covering the entire calf. Here and there were a few coin-sized, depressed, scaly, less-deeply pigmented areas which, according to the statement of the patient, represented patches of nodules which had undergone partial involution. Over the outer malleolus was a single nut-sized, pedunculated tumor, projecting considerably above the surface, which gave the patient much annoyance because of the pressure exerted on it by the shoe, and the frequent injury which it suffered, owing to its exposed situation, by being caught by the clothing and the bedclothing, considerable

[1] *Monatshefte f. prakt. Dermatologie*, Bd. xxv., 1897.

hemorrhage taking place from it at times. Upon the right leg the disease was much less extensive, the lesions being comparatively small in number, smooth, flat, without any tendency to the formation of tumors. The left leg was several inches larger in circumference than the right one, was very firm to the touch, but did not pit on pressure. There were marked itching and some burning, but never positive pain, although walking was somewhat interfered with by the swelling of the left leg and stiffness of the skin about the ankles. The disease had begun fourteen years previously, with intense itching at the root of the toes and smooth pigmentation of the dorsum of the foot, and had remained limited to the left extremity until two years ago, when it began to appear on the right foot and leg. The numerous tumors on the left calf were first noticed some five or six years ago. With the exception of a single thumbnail-sized patch on the inner surface of the left thigh, the disease was strictly limited to the legs and feet.

The treatment employed consisted in the local use of antipruritic lotions for the relief of the severe itching which gave the patient much trouble at times, the internal administration of arsenic in fairly large doses by the mouth, and the use of the X-ray. Up to the present time some fifty X-ray exposures have been made, chiefly to the left leg, at intervals of three to five days, each exposure lasting from seven to ten minutes. Owing to a severe and prolonged attack of thoracic zoster, which was probably arsenical in origin, the treatment was suspended for four weeks, and has been carried out somewhat irregularly since. The large nodular patch on the left calf was the first to be subjected to X-ray treatment, and showed decided improvement after twenty-five exposures, the small tumors becoming less prominent and losing pigment; and a similar improvement has been observed in all the parts subjected to this treatment. The itching which was the chief subjective symptom, almost entirely disappeared so that the patient no longer found it necessary to use the lotion which had been given him for the relief of this most annoying symptom. At an examination made within a day or two, striking improvement was found; not only was there a de-

cided diminution in the size of the tumors and a noticeable decrease in the amount of the pigment, but the swelling of the left leg had diminished to such a degree that it was but very little larger than the right one. It is perhaps worthy of note that, notwithstanding the number of X-ray exposures, there has never been the slightest evidence of dermatitis. May this immunity be due to a protective action exerted by the deep pigmentation of the skin?

Because of its exposed position and consequent frequent injury, the tumor over the left external malleolus was excised and subjected to microscopic examination. This examination showed that, apart from a moderate increase in the thickness of the corneous layer, the epidermis was normal. The papillary layer of the corium had entirely disappeared and the corium itself was almost entirely replaced by a cavernous tissue, which under a moderate magnification resembled an angioma. It was composed of numerous large round and oval cavities, with thin walls filled with blood, with here and there small islets of round or spindle cells between, and in which was an abundance of golden-brown pigment granules. Under a sufficiently high power it could be seen that the blood-filled spaces were lined by endothelial cells, and that the round and spindle cells were contained in a rather coarse fibrous mesh-work. In most instances the spindle-cell tracts surrounded capillaries, the long axis of the cells running parallel with the walls of the vessels. The pigment, which was present in great abundance, was situated both within the cells and between them, in the former case frequently obscuring more or less completely the outlines of the cells. The cell elements of the tumor were in all probability entirely of the spindle-cell variety, the apparently round cells being most likely transverse sections of spindle-shaped cells. In addition to the blood in the cavities already described, there were numerous interstitial hemorrhages visible in various parts of the tumor. (Plate v.)

We are practically without any definite knowledge of the causes, predisposing or direct, of this very remarkable malady. Age seems to have little or no influence upon its occurrence, cases having been observed at all ages between five and eighty,

although the great majority occurred in adult life. Semenow,[1] who saw ten cases in Stoukowenkoff's clinic within the comparatively short period of five years, noted that a large proportion of these had been exposed to more or less severe and prolonged cold, and was inclined to attribute a causative influence to this factor. In one of his cases the bluish nodules occasionally disappeared spontaneously, but always reappeared in damp and cold weather. Micro-organisms have been diligently searched for, but without success. It is true that Pringle[2] has reported the finding of bacilli in two cases, but other investigators have failed to confirm this finding. Bernhardt[3] believes the parasitic theory would best explain its origin, but his bacteriological investigations, like those of others, have been fruitless. This author reports a case in which frequent attacks of erysipelas occurred, but instead of exerting a favorable influence upon the course of the malady, as in some other forms of sarcoma, these were always followed by the appearance of fresh sarcoma nodules in the areas affected by the erysipelas.

The course of the disease is usually quite slow, extending over years, new lesions appearing at longer or shorter intervals and slowly enlarging. Exceptionally, however, lesions may appear very suddenly. Semenow has seen a large blue patch appear in the course of a single night. This sudden appearance of extensive new lesions is due, according to Bernhardt, to the occurrence of abundant, sharply circumscribed hemorrhages into the skin which simulate sarcomatous nodules. The mucous membranes may be implicated comparatively early in the course of the affection, as evidenced by the appearance of pigmented patches on the buccal and palatal surfaces. Visceral metastases occur late and usually soon bring about a fatal termination. It is of interest and importance to note that the bones of the extremities may be involved in the morbid process. In one of Bernhardt's cases disease of the bones of the foot was demonstrated by the

[1] *Monatshefte f. prak. Dermatologie*, Bd. xxv., 1897.

[2] *Comptes Rendus Congrès International de Dermatologie et de Syphiligraphie*, Paris, 1890.

[3] *Archiv f. Dermatologie u. Syphilis*, Bd. lxii., 1902.

X-ray, and after amputation it was found that the phalanges, with some of the metatarsal and tarsal bones, were almost destroyed, being converted into a spongy mass. Halle likewise reports a case in which the bones of the great toe, enucleated on account of severe pain, were found to be completely destroyed and converted into sarcomatous tissue. Although a fatal termination is to be expected when internal metastases take place, the patient's health is usually astonishingly well preserved until this time, the disease apparently exerting little or no influence upon the general economy so long as internal organs are not invaded. Spontaneous involution of some of the lesions, more or less complete, not infrequently takes place, as in the case I have reported in this paper. The small tumors become less prominent, grow paler, become scaly, and finally sink below the level of the surrounding skin. On the other hand, recurrences may follow extirpation of nodules.

Owing to the striking and peculiar symptoms of the disease, all observers are of one mind as to its clinical characteristics, but there is considerable divergence of opinion as to its histopathology, and more especially as to its place in nosology. While most authors agree with the view of Kaposi that the affection is a form of sarcoma, a not inconsiderable minority regard its sarcomatous nature as more or less doubtful, while a few deny it absolutely. Most of those who have studied its histopathology found the lesions composed of spindle-celled elements, either entirely or in large part; a few found only round or oval cells, while Kaposi and Perrin[1] found both types of cell. Bernhardt maintains that this form of sarcoma is exclusively spindle-celled.

De Amicis, whose experience with this malady has probably been larger than that of any other author, believes it a well-defined type of disease whose nosographic position lies between granuloma and real sarcoma and whose nature is unknown. On account of the severe pains which frequently accompany its early stages, the œdema, the severe itching, the increased activity of the secretory organs, the symmetrical

[1] Thèse de Paris, 1886.

distribution of the lesions, the collection of pigment which he found in the cells of the spinal ganglia, and finally because of some changes in the nerves themselves, Semenow believes that the affection is closely related to the nervous system in its origin. Bernhardt's investigations lead him to the conclusion that it is a sarcoma originating in the perithelium of the blood vessels—a perithelioma—of unknown cause. Halle looks upon it as a disease of the vessel system and rejects the theory of its microbic origin; he believes it rather due to complicated processes taking place in the organism itself. Sellei[1] considers that recent histological investigations have shown that the affection is not a sarcoma—is not even to be reckoned among the new growths—but is a granuloma, and proposes to call it "*granuloma multiplex hæmorrhagicum.*" The study of my own case, and of the literature of the subject, leads me to agree with the views of those who regard the malady as a sarcoma of special type, and especially with the views of those who consider it a disease of the blood vessels; certainly these play an important part in its production.

In view of the favorable reports of Köbner,[2] Sherwell,[3] and more recently of De Amicis, the use of arsenic is certainly to be advised in the treatment of this grave disorder. At the Congress at Rome, De Amicis reported eleven cases treated by subcutaneous injections of arsenic; in five of these there was no noteworthy benefit; in two there was essential improvement, and in four the course of the disease was arrested. Later he reported two additional cases; one, a boy fifteen years old, in whom a cure was obtained after one hundred injections; the other, a man fifty-two years of age, in whom almost complete recovery took place. On the other hand, Kaposi, Bernhardt, and others report nothing but complete failure in their trials with this drug. The chief difficulty in determining the value of any method of treatment in this affection lies in the fact that spontaneous involution of the lesions may take place, and, in rare cases, even complete recovery, as in the remark-

[1] *Monatshefte f. prak. Dermatologie*, Bd. xxxi.
[2] *Berliner klin. Wochenschrift*, 1883.
[3] *Jour. Cutaneous and Genito-Urinary Diseases*, 1897.

PLATE V—To Illustrate Dr. M. B. Hartzell's Article.

Idiopathic Multiple Hæmorrhagic Sarcoma
16 mm. Obj. Compens. Oc. 4.
a.—Spindle cell areas.
b.—Cavities containing blood.

able case reported some years ago by Hardaway.[1] Quite recently the X-ray has been employed with some benefit. Halle reports that, after producing a reaction of the first degree with this agent, there was a decrease in the infiltration and pigmentation; and Selhorst and Polano observed some improvement after the use of the ray. In my own case there was an undoubted diminution in the infiltration of the skin and a decided lessening of the swelling of the limb, with decrease of pigment after prolonged X-ray treatment.

*Discussion*

Dr. Edward H. Shields, of Cincinnati, referred to several cases of this character which he saw in the clinic of Prof. Kaposi. One case was of particular interest—a woman with multiple lesions suddenly developed a temperature; with the appearance of the fever the lesions disappeared, leaving no ocular trace of the disease. A section showed complete absorption of the cellular elements.

Dr. Rollin H. Stevens, of Detroit, said that for the past two years he has had under observation at Ann Arbor, a case of this disease very similar to the one reported by Dr. Hartzell. The patient was a man, seventy-two years old, a native of Michigan, in whom the disease had developed about five years before, after a two years' residence in Denver and the West. He first noticed a swelling of the feet and later a number of dark, bluish nodules on the backs of the feet and hands, with the subsequent development of lesions on the palms and soles. These extended to the arms and legs, and later lesions developed on the palate, tongue, penis, back, neck, and eyelids. He had a tumor on each eyelid, one about the size of a cherry and the other as large as a plum. These were excised and sent to the pathological department of the University of Michigan, where sections were examined and pronounced to be fibroma molluscum, the young connective tissue cells resembling the spindle cells of sarcoma. Subsequent examinations of sections taken from one of the lesions on the foot showed the true spindle cells of sarcoma. The tumors in the soles of the feet became papillomatous and sensitive.

Dr. Samuel Sherwell, of Brooklyn, said that about 1892 he wrote an article on multiple sarcoma and gave report of a case

[1] *Jour. Cutaneous and Genito-Urinary Diseases*, 1890.

which was published in the *American Journal of the Medical Sciences*, Oct., 1892.

In this paper he had claimed good results from the use of arsenic in large dosage. He referred to it, as it might prove of use to those interested in the subject, showing as it did what might be accomplished by medical means alone, as an inhibitive or prophylactic, and even curative method.

Dr. Hartzell, in closing the discussion, said the exact place in nosology of this disease was still uncertain. Some regarded the malady as sarcoma; others as granuloma.

## MULTIPLE BENIGN CYSTIC EPITHELIOMA

By Dr. M. L. Heidingsfeld, of Cincinnati

The subject of multiple benign dermatological new growths is enveloped with considerably more haze than the long line of careful clinical observations and pathological investigations seemingly warrant. This haze, which was notably absent from Kaposi's earliest classical description of lymphangioma tuberosum multiplex in 1892, has materially increased with the successive investigations of Jacquet and Darier on hydradénomes éruptifs; Török, on syringo-cystadenom; Brooke, on epithelioma adenoides cysticum; Fordyce, on multiple benign cystic epithelioma; Balzer and Menetrier, on adenoma sébacés; Pringle, on adenoma sebaceum, etc. This haze, at least in a measure, has been doubtless due to over-attention to minor clinical and pathological details, and has resulted in overwhelming this class of dermatological affections with a mass of complexing synonyms.

From the earliest there has been a constant conflict of opinion among those in authority as to whether the cases thus far reported can be consistently divided into a number of distinct groups or collected with greater propriety and convenience into a single class. The three principal groups into which most of the cases have been readily placed are: (1) multiple benign cystic epithelioma, (2) lymphangioma tuberosum multiplex, (3) adenoma sebaceum, to which a possible fourth can be added, (4) linear nævi. The clinical char-

acteristics of these various groups have been sufficiently long and well established to permit their ready recognition, and in themselves require but little comment. In multiple benign cystic epithelioma the lesions are usually small, pin-head to split-pea in size, glistening, translucent in appearance, yellowish, pinkish, or bluish white in color, rarely ulcerated, but sometimes centrally depressed, situated for the most part on the face, principally at the root of the nose, cheeks, forehead, ears, and chin, bilaterally symmetrical, but grouped. The cases are mostly hereditary, females, develop at puberty, and consist pathologically of masses—of epidermal origin—of irregular interlacing epithelial strands, broad angular in outline, giving off smaller strands, and interspersed with oval or roundish cysts containing colloid or cornified epithelium. The nodules develop slowly, and after attaining a moderate development usually remain stationary in size. The lesions in adenoma sebaceum are very similar to those in multiple benign cystic epithelioma, but are usually more symmetrical in distribution, and reddish brown in color. The pathological change is usually a hyperplasia of the sebaceous glands, which is by no means constant, as will be referred to later. Lymphangioma tuberosum multiplex is characterized by small roundish or oval lesions, pin-head to a split-pea or larger in size, firmly imbedded in the cutis and slightly elevated above the surface, irregularly but bilaterally distributed over the anterior aspect of the thorax and the fossa of the neck. Pathologically they are mostly endothelial in character, derived from lymph and blood vessels. Linear nævi, when linear in distribution and unilateral in character, are readily recognizable and require no special clinical comment, but when they occur in the form of multiple, bilaterally distributed, discrete lesions, with a distribution analogous to the affections already enumerated, they can present clinical and pathological features difficult of differentiation.

All these groups present many common clinical and pathological characteristics. Most authorities concede to them an embryonic congenital origin from misplaced epithelial tissue. Most of them are stimulated by puberty to their greatest degree of new growth and development. The patho-

logical findings in each group are exceedingly varied, but, group compared with group, possess much in common. They often present common clinical characteristics in size, color, stability, distribution of the lesions, and their hereditary and painless character. Their common though infrequent change to malignancy has also been noted. Most authors, while still maintaining separate groups for certain clinical considerations, are frank to admit that they possess much in common to permit a unification and simplification of this particular class of dermatological cases. Crocker[1] (p. 984), who is a strong advocate for the division of these cases into separate groups, is frank to admit that multiple benign cystic epithelioma, lymphangioma tuberosum multiplex, and adenoma sebaceum possess many common characteristic traits; that certain clinical features which serve to distinguish them from each other possess merely relative value; that the microscope must often decide, and the pathology still awaits more common and general agreement.

Wilhelm, in presenting a case to the Vienna Dermatological Society, stated that "lymphangioma tuberosum multiplex" is variously diagnosed as hydradenoma, hemangio-endothelioma, syringocystadenoma, etc., according to the pathogenesis from gland, blood or lymph vessel of the skin as determined by microscopical examination."

[1] Crocker states that "these cases (multiple benign cystic epithelioma) resemble adenoma when abundant. The distribution and aggregation may be exactly like adenoma sebaceum, except on the forehead, where the growths are sparse in adenoma sebaceum, while in the other they are closely grouped for the most part. . . . In a few cases when the growths are sparse, the microscope would have to decide the question." In writing of lymphangioma tuberosum multiplex, he states (p. 978): "Kaposi was the first to describe a case of this rare disease from Hebra's clinic, and the name he gave it stands at the head of this article on the score of priority, but not as representing the true nature of the growths, as it is worse than useless to change it until more general agreement is obtained regarding the pathology of this affection than the farrago of synonyms indicates to be now the case." Again in a report to the London Clinical Society, he pleads for the separation of multiple benign cystic epithelioma and lymphangioma tuberosum multiplex, in spite of their many common characteristics, and in addition to a number of clinical and pathological differences of a relative nature, that the former is not hereditary and females predominate largely with the latter. In my own case of lymphangioma tuberosum multiplex herewith reported, the son inherited the condition from his mother, and in

Dorst and Delbanco report a case of linear nævus which they desire to class with multiple benign cystic epithelioma, and Gottheil, among many others in the literature, reports an apparent case, from its clinical aspects, of nævus linearis or white mole of the scalp as an adenoma sebaceum.

### REPORT OF CASES

G. C. G., aged sixty-five, came to my attention for the first time March 6, 1905. The nose (Plate vi, Fig. 1.) was the site of about seventy-five small rounded or slightly pedunculated new growths, varying from a pin-head to a split-pea or slightly larger in size, reddish yellow in color, imbedded in the cutis, non-sensitive to touch, and painless to pressure, and situated mostly on each ala and the root of the nose. A number of smaller lesions were distributed over the forehead in front and behind the ears, and over the chin. The tip of the nose and the cutaneous surface of the septum were also the site of the lesions. There was no evidence of ulceration or active inflammation. Patient stated that the lesions first manifested themselves when he was about thirty years of age, and that they have steadily but slowly increased in size and multiplied in number. There was no history of any similar condition on his father's side of the family. His mother, to his personal knowledge, was free from the affection, but died before she reached the age of thirty. An uncle and an aunt on his mother's side of the family were similarly afflicted, and all of his children, two sons, aged thirty-four and thirty years respectively, and two daughters, aged thirty-eight and thirty-six years respectively, evidence the marked hereditary character of the affection. I am able to add my personal confirmation to the inherited traits in three of the children, and they show the same clinical and some of the pathological characteristics of the father. The affection began in all of the children on the nose, when they were from twenty-five to thirty years of age, and although the lesions at the present time are considerably smaller in size, varying from a pin-

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five cases of multiple benign cystic epithelioma the father shared the affection with his two sons and two daughters.

head to a good-sized shot, they have the same distribution as that of the father, except in the second oldest daughter the neck is also involved and the lesions show the same clinical and physical characteristics. The most striking feature of the cases is the fact that, while nearly all the cases reported in the literature have occurred in females, in this instance four males and only three females were afflicted. These cases from three of whom, father, one son, and one daughter, lesions were excised for histological examination, together with five other cases of multiple benign cystic epithelioma, form the basis of the pathological investigation of this report. In one of the five remaining cases, Mr. B. P. M. (Plate vi, Fig. 2), aged sixty-five, the lesions were multiple, fifteen to twenty in number, glistening, translucent, yellowish white in appearance, some centrally depressed and situated underneath each eye, over the forehead, cheeks, and chin. There was no progeny in this case and a history of heredity was unobtainable.

The microscopic examination revealed an abundance of interlacing epithelial strands and cysts. In the remaining cases the lesions presented the characteristic clinical appearance of multiple benign cystic epithelioma, but they were for the most part single and discrete, or consisted of a small group situated over a limited area of the face. All showed among other pathological changes interlacing epithelial strands and colloid cysts. To these cases is added for comparative study a case of lymphangioma tuberosum multiplex of Kaposi in P. A. H., a full-blooded negro, aged twenty-five years, whose anterior aspect of the thorax, in a triangular area bounded by the nipples and the umbilicus, is studded by several hundred smooth rounded lesions, varying from a pin-head to a split-pea or larger in size, slightly elevated above the level of the surrounding skin, well imbedded in the cutis, more or less oblong in outline, with the long diameter running transversely with the long axis of the body. A group of about fifty of these lesions is situated above the clavicles and over the hollow of the neck, and four or five small lesions are over the left scapula. A few lesions have undergone an apparent spontaneous ulceration, and are the site of faint depressed cicatrices. The condition has been present as long as the

patient can distinctly remember; but the lesions have slowly and steadily increased in size and number. Subjective symptoms have been uniformly absent. Patient, who is married, but without progeny, states that his mother is similarly affected, but he has no personal knowledge of any other hereditary influences. The most striking clinical feature of this case, is the occurrence of the affection in the negro, the first to be recorded in that race, as far as my personal knowledge permits me to state, and its hereditary character, which is strongly denied by some authors. For further comparative study, is added a case of a rapidly growing hairy pigmented mole upon the chin of a young man, W. H. N., aged twenty-one, which took on active development at the age of puberty and showed upon histological examination some peculiar embryonic features. Finally, I wish to add a case which was diagnosed by its clinical features as adenoma sebaceum, and presented as such in Pusey's text-book (Fig. 286, p. 866, 1907), Miss M. B., aged twenty-seven. This case was observed some seven years ago, into which a history of heredity was not inquired, and a diagnosis of multiple benign cystic epithelioma was not suspected. The patient has since passed from my personal observation, but personal recollection leads me to believe that a differentiation of these two affections in this case, without a well defined clinical history or a pathological examination, would be difficult to effect.

## PATHOLOGY

The most striking, constant, and characteristic pathological change in multiple benign cystic epithelioma (Plate vii, Fig. 3), is the well recognized and oft described interlacing epithelial strands, consisting of two rows of large oval nucleated epithelial cells here and there irregularly dilated by an apparent endothelial proliferation. These strands have a very irregular distribution, for the most parallel with or vertical to the surface of the skin. They possess many short bifurcations, and are of short irregular lengths (Plate vii, Fig. 4). Occasionally they are short, and usually broad, and end in three or more short tail-like processes which give them a peculiar stellate

appearance. They are most freely distributed in the upper portion of the derma, near the papillæ, but often extend in greater or less degree into the lower depths of the cutis to the layer of subcutaneous fat. Their identity with the ducts or glands proper of embryonic misplaced or imperfectly developed sweat glands, has been often considered, but is a question to which I can add from my personal observations neither refutation nor confirmation. Sometimes, in the larger, longer-standing, and more rapidly developing lesions, I have observed these bands to be unusually broad and irregular in outline, containing masses of actively proliferating epithelium, with tongue-like processes extending from the borders, imparting to them a spread-tail-like appearance. In addition to these strands, there are a number of irregularly distributed round or oval cysts of varying size, with an epithelial wall of several layers of cells, with the contents mechanically removed or consisting of more or less concentrically arranged stratified epithelium or colloid material (Plate viii, Figs. 5, 6.) In addition to these two usually most important changes, there is, as a rule, a secondary change in some other tissue element—a hyperplasia of the hair follicles, connective tissue, sebaceous or sudoriferous glands, which is more or less constant for the lesions of each case. These features pertain principally to smaller lesions; in the larger, longer standing, more actively growing lesions, the original secondary hyperplasia assumes the primary rôle, and the adenoma sebaceum, sudoriparum, pili, etc., completely or incompletely overshadows the other pathological changes. In the first group of cases, the father showed a marked hyperplasia of the hair follicles in addition to the other characteristic changes. These structures were not only markedly increased in depth, circumference, and stratified contents, but gave off very peculiar-looking, single, occasionally branched horn-like processes. (This pathological change has also been noted by Fordyce, p. 467.) The most striking pathological change in the son's case was a marked proliferation of the connective tissue from masses of embryonic-looking cells. In the daughter's case the chief secondary change was a marked hyperplasia of the sebaceous glands, which in the larger lesions resembled an adenoma

sebaceum. This feature was also very marked in one of the cases where the lesions were few in number and circumscribed in area.

The chief pathological change in the remaining cases is a very marked adenomatous hyperplasia of what apparently were original sweat glands, or possibly the interlacing strands of epithelial tissue, which characterizes the condition. This adenomatous tissue is made up of large, rounded irregular masses, consisting of two or more rows of epithelial cells, arranged in columns, interlacing and closely grouped with more or less polygonal interstices of almost uniform size and distribution, corresponding to the cystic dilatation frequently observed in pathologically changed sweat glands and so-called cylindromata cutis. They are surrounded by a thin meshwork of connective tissue, extending almost to the surface of the skin, and situated for the most part in the upper layers of the cutis. In many of the cases the interstices are longitudinally extended toward the surface, near the centre of the adenomatous tissue, as if they corresponded or were derived chiefly from the ducts of the original glands. The cells showed active mitotic changes and extensive proliferation, particularly around the external portions of the adenoma, so that the borders of the larger lesions seem to be made up of a mass of conglomerate cells, devoid of any particular arrangement. In two of these cases, in addition to this change mentioned, the hair follicles in the immediate neighborhood showed very extensive hypertrophic changes, so that they were many times increased in length and breadth, with their borders distinctly lobulated. In a few instances the central portion of the hair follicle corresponding to the site of the original hair was filled with a mass of epithelial débris, consisting of degenerated imperfectly keratinized and stratified epithelium. In others this area showed merely a clear space, indicating that the soft material had been mechanically removed by the knife on sectioning or had fallen away in the preparation of the specimen. The case of lymphangioma tuberosum multiplex showed a very peculiar anomalous condition, the analogy of which I have been unable to find in the literature, with the possible exception of Pollitzer's case, reported in the *Journal*

*of Cutaneous Diseases* (vol. ix., p. 281). The lesions consisted of cysts surrounded by a wall of loose connective tissue and lined with a number of layers of epithelial cells. The larger cysts could not be hardened or sectioned with any satisfaction, the contents being mechanically removed with the knife on sectioning or falling away in the preparation of the specimen. The smallest lesions, pin-head in size, showed the cysts to be filled with a mass of degenerated, cheesy-looking epithelial débris and a large amount of small lanugo hairs, concentrically arranged in the form of locks. The lesions bear pathological analogy to the dermoid cyst of the ovary, and in the absence of any evidence of hair follicles in the immediate neighborhood of the lesions they give strong evidence of their embryological derivation from misplaced epithelial tissue from the epiblast. All the lesions which could be sectioned with any satisfaction, and some fifteen or twenty were examined, showed identically the same change. None of the lesions gave any evidence of having been derived from the endothelium from the lymph or blood vessels, and therefore this case of lymphangioma tuberosum multiplex is unique in its pathological character compared with those already reported in the literature. The case of pigmented hairy mole showed also a very anomalous and unusual pathological condition. On sectioning, it was noted that the knife encountered some extremely hard substance, which was at first thought to be calcareous material. Two microtome knives were practically ruined in obtaining very imperfect specimens from this case. While the sections were being cut, a number of very small, poppy-seed-size, glistening bodies could be observed lying free upon the specimens and knife-blade, and a number were picked out from the gross specimen by means of a pair of tweezers. Examination of these bodies showed that they consisted of rounded masses of concentrically arranged laminated bone, which contained typical Haversian canals and bone cells. Under the microscope the tissue, in addition to the characteristic appearance of the ordinary piliferous pigmented mole, showed a number of these bony nodules situated in the lower layers of the cutis above the subcutaneous layer of connective tissue and fat.

The specimens also showed a number of cavities from which these bony structures had been mechanically removed by the knife. This case is, therefore, classed with a very rare condition encountered in the literature, osteoma cutis, and gives additional evidence of the embryological development of some of these new growths from misplaced tissue, which in this instance must have been derived from the mesoblast. (This and the preceding case will each form the basis for a subsequent report.)

### GENERAL OBSERVATIONS AND DEDUCTIONS

It is evident, therefore, that multiple benign cystic epithelioma, in common with lymphangioma tuberosum multiplex, adenoma sebaceum, and some of the forms of linear nævus, present many clinical and pathological variations within these respective groups, and are sufficiently common to each other to materially prevent a sharp differentiation of these commonly considered dermatological entities. Their development from embryonic misplaced epithelial or endothelial tissue is almost universally conceded to be one great point of common resemblance, which should serve as a strong nucleus around which to gather other common traits for the elimination of any arbitrary division of these affections. Crocker, who has already been quoted as an advocate for the separation of these affections, states (p. 988) that adenoma sebaceum is "presumably an error of development in the shape of a congenital overgrowth of an adenomatous character developing from embryonic remnants in the skin, but in my experience affecting all the appendages, and therefore really a pilo-sebaceous hydradenoma." Again he states: "The two diseases (multiple benign cystic epithelioma and adenoma sebaceum) resemble each other. Indeed it would not be surprising if both these affections would turn out to be slightly different clinical expressions of the same pathological process." Walter Pick states that the clinical variations are marked, but the histological picture is so characteristic and marked as to permit both the diagnosis and differential diagnosis. A survey of some of the cases in the literature will readily reveal

some marked clinical and pathological variations. Brooke's, Fordyce's, Felländer's, and Balzer's cases resembled clinically adenoma sebaceum. Derivation from the sweat glands was noted in the cases of Brooke, Darier, and Török; from sebaceous glands, by Pick and Balzer; from all the various structures, by White, Fordyce, Wolters, and Felländer; from hair follicles, by Jarisch; from the epidermis, by Csillag. Krzysztalowicz states that the pathology of adenoma sebaceum consists of a proliferation of all organs and tissues of the skin in the most varied combination. He objects to its nomenclature and, together with Leredde, Pezzoli, Jadassohn, Dohi, Möller, Winkler, and many others, classes the affection with the nævi. Reitmann reports a case of adenoma sebaceum in which the chief pathological change was a connective tissue hypertrophy poor in cells, rich in vessels, to which he attributed an embryonic development. Thin reports a case that was clinically a lymphangioma tuberosum multiplex, in which the lesions were derived from the normal sweat glands, which showed endothelial proliferation and cystic dilatation. Neumann, Blaschko, Unna, Philippson, Quinquaud, Török, share this same view in regard to the origin of their cases of lymphangioma tuberosum multiplex. Kaposi, Lesser, Kromayer, attribute the origin of their cases to lymph vessels; Wolters, Guth, Elsching, Jarisch, to blood vessels; and Jacquet and Darier, to misplaced embryonic epithelial cells. The subject cannot be dismissed without consideration of the relation of these cases to malignancy. This feature has already received careful clinical impress at the hands of White and Jarisch in the presentation of cases with ulcerative changes not far removed from those observed in malignancy, and with the comment that these cases have been observed and recognized too short a time to permit as yet a proper estimate of their terminal course. Fordyce has presented a very careful pathological report of the affection and has recorded the striking analogy which exists in the pathology of these two affections. My personal observations in the pathology of multiple benign cystic epithelioma are a confirmation of those of Fordyce, and I am frank to state that the advanced lesions of multiple benign cystic epithelioma

not only show evidence of malignant change, but I have been able to find a parallel for them in every pathological phase and form in the clinical lesions of early or pre-malignant change in the skin. This leads me to believe that malignancy, aside from prolonged irritating influences, has its focus in embryonic misplaced tissue, which is further confirmed by the oft-observed multiple excoriations, keratoses, and secondary ulcerations in malignancy of the skin, which are prone to take on the same malignant changes as the primary lesions, particularly if the latter are removed or favorably influenced by treatment.

## CONCLUSIONS

1. Multiple benign cystic epithelioma presents many clinical and pathological variations common to those of adenoma sebaceum, lymphangioma tuberosum multiplex, and some of the forms of nævus with discrete bilaterally distributed lesions.

2. All these enumerated affections present a common pathogenesis from misplaced embryonic tissue; their individual pathology and clinical characteristics are exceedingly varied, but common to each other.

3. The terms multiple benign cystic epithelioma, lymphangioma tuberosum multiplex, and adenoma sebaceum, or their numerous and varied synonyms, are not appropriate to the clinical and pathological character of these affections. In view of their common pathogenesis and the close alliance of many of their clinical and pathological characteristics, these affections, to avoid any arbitrary reduplication and unnecessary redundancy in nomenclature, should be conveniently grouped into one class.

4. The pathology of each of these so-termed separate types of dermatological new-growth embraces the hypertrophy of all the glandular elements and all the tissues of the skin in the most varied form and combination, and precludes the use of pathological descriptive terms in the nomenclature. In view of their common embryonic derivation, and the multiple discrete papular disseminated character of the lesions, an

appropriate and generic nomenclature would be "Multiple Disseminated Embryonic Lichenoid Eruptions of the Skin."

5. Careful consideration should be given to the analogy which this class of affections bears to the clinical and pathological changes of early malignancy, and to what extent malignancy owes its origin to lesions whose presence are due to the errors of embryonic development.

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PLATE VI—To Illustrate Dr. M. L. Heidingsfeld's Article.

FIG. 1.

FIG. 2.

PLATE VII—To Illustrate Dr. M. L. Heidingsfeld's Article.

FIG. 3.

FIG. 4.

PLATE VIII—To Illustrate Dr. M. L. Heidingsfeld's Article.

FIG. 5.

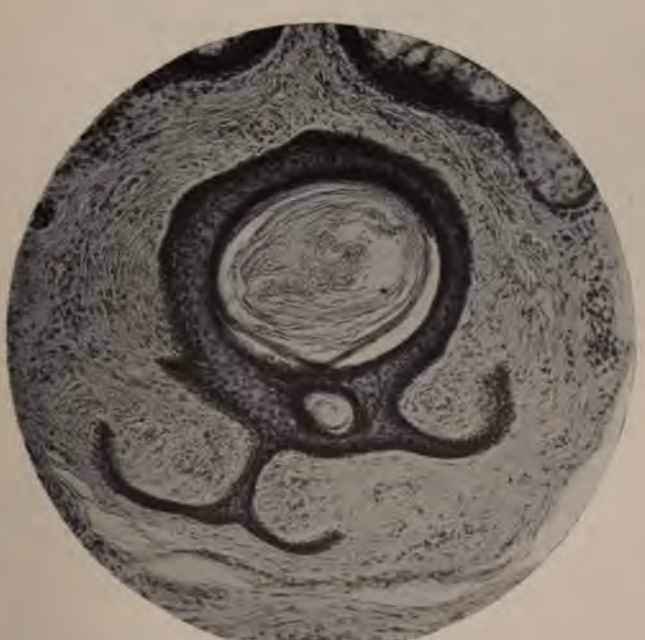

FIG. 6.

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## DESCRIPTION OF PLATES.

Plate vi., Fig. 1.—Multiple benign cystic epithelioma. A maternal aunt and uncle two sons and two daughters similarly affected. The lesions developed in all the cases at the age of twenty-five to thirty years, and are distributed mostly on the nose. (Clinical type of the first class of cases.)

" Fig. 2.—Multiple benign cystic epithelioma. Showing a number of glistening, translucent lesions, some centrally depressed. (Clinical type of the second class of cases.)

Plate vii., Fig. 3.—Multiple benign cystic epithelioma, showing many short interlacing epithelial strands in the upper layer of the cutis, with a distribution for the most part parallel and vertical to the surface of the skin. The specimen also shows a cyst filled with colloid substance, several without contents, and a few remnants of sebaceous glands. This is the most common and striking form of pathological change in multiple benign cystic epithelioma, but is not constant enough to possess characteristic and pathognomonic value.

" Fig. 4.—Ephitelial strands of Fig. 3, more strongly magnified, showing their parallel and vertical distribution, angular outline, bifurcating and stellate character. The strands consist of two or more rows of epithelial cells. At the bottom, the wall of an empty cyst can be readily seen.

Plate viii., Fig. 5.—Chief pathologic change in the lesions obtained from the father in the first group of cases. Hair follicle in circumference and stratified contents, giving off peculiar-looking horn-like processes, single or branched in character.

" Fig. 6.—Showing characteristic cysts and adenoma of sebaceous glands.

## *Discussion*

DR. M. B. HARTZELL, of Philadelphia, said the affection which Dr. Heidingsfeld had described invariably has its origin in the hair follicles. There was more or less similarity between these cases and those described as syringocystoma, and the speaker said that in his opinion they were both varieties of one and the same disease. He thought it could be shown—in fact, he had sections which showed beyond the shadow of a doubt—that the

long, slender duct-like processes in the latter took their origin from the hair follicles, and that this could be demonstrated in the vast majority of cases. No one had succeeded in showing any connection between these long slender duct-like tracts and the sweat glands. Practically, these two processes, which clinically were much alike but which showed some pathological differences, were examples of the same disease, and were due to an abnormal increase in the epithelium, in both instances having their origin in the hair follicles.

Dr. Joseph Grindon, of St. Louis, said it seemed to him rather important to preserve the distinction between the two conditions on clinical grounds. In one we had a certain syndrome which might be called the Perry–Brooke–Fordyce type, chiefly in women, with discrete but grouped, symmetrical lesions occurring on the face and temples, at the root of the nose, and on the back, which clinically, it seemed to him, were very different from the larger lesions so often seen on the trunk, neither grouped nor symmetrical, the hydradénome éruptif of Jacquet Darier, probably the same thing as lymphangioma tuberosum multiplex.

## OBSERVATIONS ON SKIN DISEASES IN THE NEGRO

By Dr. Howard Fox, of New York

In presenting to you the subject of skin diseases in the negro, I have a double excuse to offer. I feel in the first place that this branch of dermatology has long been sorely neglected. In the second place I have hoped that, as the opportunities to observe negroes abroad are very limited, this subject might prove of interest to our foreign visitors.

Valuable statistics upon five hundred and fifty-six cases of skin disease in the negro have been contributed by Dr. Isadore Dyer of New Orleans. With the exception, however, of Morison who compared five hundred cases of skin diseases occurring in negroes with an equal number of whites, no one has attempted a statistical comparison of skin diseases affecting the two races. Owing to the kindness of Dr. Gilchrist of Baltimore, and Dr. Carmichael of Washington, I have been enabled to make a comparative study of four thousand four

hundred cases, half of them in the negro and half in the white race.

It would perhaps have been more fitting if the subject had been treated by one of my southern colleagues whose opportunities for studying negroes are much greater than any we have in New York. My sources of information, however, include a correspondence with physicians in all of the South Atlantic and South Central States, with the exception of Delaware, Indian Territory, and Oklahoma, making a total of fifteen States, including Missouri. In this area are to be found approximately nine-tenths of the negroes of Continental United States.

My personal experience has been confined chiefly to the Vanderbilt Clinic in the service of my father, Dr. George Henry Fox. As there is a considerable negro population in the neighborhood of the clinic, very fair opportunities for observing skin diseases in this race have been presented. The majority of cases in my exhibition of photographs are from the Vanderbilt Clinic.

My statistics are partly from the Central Dispensary of Washington, and partly from the Johns Hopkins Dispensary of Baltimore. The objection that these statistics are from practically one section of the South, Baltimore and Washington being neighboring cities, is a valid one. I should like to have obtained records from several widely separated regions of the South, but it was not possible for me to do so.[1]

Though the literature pertaining to skin diseases in the negro is very limited, I have found especially valuable information in the writings of Atkinson, Morison, Dyer, Corson, Matas, and Rufz.

The history of our colored population dates from 1619,

[1] The statistics from the Central Dispensary include one thousand two hundred cases of whites taken from ten consecutive years, 1897 to 1906 inclusive, and a similar number of cases of blacks for eight consecutive years, the blacks at this dispensary being numerically greater. The remaining one thousand cases of each race are from the Johns Hopkins Dispensary. At the latter clinic owing to the disproportion in favor of the whites, the records of one year February, 1906 to 1907 only, were required to furnish one thousand consecutive white cases, whereas six years (November, 1901 to February, 1907) were required to supply an equal number of cases in the negro.

when the first slaves were brought to Virginia. In 1776 more than 300,000 slaves had been brought to the colonies, and at the end of the Civil War there were 4,000,000 of negroes in the United States. According to the twelfth census, that of 1900, there were approximately 8,840,000 negroes in Continental United States, out of a total population of nearly 85,000,000. It seems to me that this vast number of negroes affecting by its presence the statistics of economics, social and political science, must also have its influence on medical statistics and should be worthy of study in every branch of our science.

Although at present the American negro represents a fusion of numerous African tribes, it is still thought possible by some to distinguish certain subtypes. According to Otken, "We have in the United States the Guinea negroes, Yoloffs, and Caffres. To these must be added those in whose veins flow one-half, three-fourths, or seven-eighths white blood, or the mulattoes, quadroons, and octoroons. (The last three are designated usually by the common title mulatto.) The Guinea negroes constitute an overwhelming majority. They are characterized by their woolly hair and black skin, thick lips, broad flat nose, prognathous jaws, receding forehead, slender limbs, and massive feet. The Yoloffs in addition to woolly hair and jet black skin, possess a fine form and strictly European features. The Caffres have woolly hair, blackish-brown complexion, and have a fine form and features. The Yoloffs and Caffres may constitute from five to ten per cent. of the pure African race."

Interesting as the study of the various types of American negroes may be, it is of more practical importance for the purpose of this inquiry to obtain some idea of the numbers of mulattoes in the Southern States, the region from which my statistics were obtained. It was the conclusion of four independent groups of enumerators of the twelfth census, that between one-ninth and one-sixth of the negroes in Continental United States showed an admixture of white blood. The greatest number of mulattoes were found in regions where the proportion of blacks to whites was small and the smallest number where the proportion of blacks to whites was large. This is well illustrated by the report of the eleventh census,

showing thirteen per cent. of mulattoes in the South Atlantic States, twenty-three per cent. in the North Atlantic and sixty-two per cent. in the Western States. For the purpose of enumeration, all persons were classed as negroes who were considered to be such in the communities in which they lived. The same census showed fifteen and nine-tenths per cent. of mulattoes for the State of Maryland, and the rather high figure of twenty-six and two-tenths per cent. for the District of Columbia, from which a considerable part of my statistics were obtained.

It is the question of mulattoes that presents one of the great difficulties of a statistical inquiry like the present one. If my study could have been confined solely to full-blooded negroes, it would unquestionably have been of greater scientific value. Although my statistical tables include without discrimination all "colored" persons from the octoroon to the full-blooded blacks, I have obtained, however, from my correspondents, some valuable information relating solely to the full-blooded negroes.

A very obvious difficulty to the study of skin diseases in negroes is presented by their deeply pigmented skin. On this account a diagnosis of the exanthemata, rosacea, in its early stages the various forms of erythema and purpura, and certain pigmentary affections is often difficult and at times impossible.

Another difficulty is presented by the unreliability of statements of many negro patients. The following description of Dr. Grindon of St. Louis, truthfully represents the dense ignorance of a considerable portion of our negro population. "Negroes rarely know their ages, and in stating them are often as much as twenty years out of the way. Women are often 'about twenty' until they cease bearing children. Soon after that they are 'about seventy.' After some ten years of this they are 'over a hundred.' "

In the effort to determine the relative frequency in general of skin diseases in the two races, a further difficulty is encountered by the fact that negroes do not seem to patronize our public clinics as often as whites. Their numbers in dispensary practice, according to Drs. Grindon, Dyer, and Rosenthal, are proportionately less than those of the whites. They

are only apt to seek treatment for affections of the skin which cause positive annoyance or pain. Their smaller attendance at our clinics may be due, as Dr. Grindon suggests, to the careless habits of their race and to their widespread though lessening prejudice against medical schools, and all that pertains thereto. In order to obtain positive proof that skin diseases are less prevalent in the negroes than in the whites, it would be necessary to ascertain the total white and black population of a community, and to compare this with the total number of applicants at dermatological and at all other combined clinics. Though I have not undertaken such a heroic task, my conviction is firm that negroes do *not* suffer from skin diseases in general, as often as whites.

Do negroes suffer less severely than whites? is a question which naturally follows. It will be one of the objects of this paper to attempt to answer this question in the affirmative and to show that most diseases of the skin affect the negro *less* severely than they do the whites. This proposition, if true, will seem the more unusual in view of the well-known susceptibility of the negro to a large number of constitutional and other diseases.

That the American negro at present suffers more from disease in general than the white man is shown by the reports of the last census. The mortality in the registration area for the negro was found to be thirty and two-tenths per cent., while that of the whites was only twenty-seven and three-tenths per cent., or less than one half as great. Furthermore, according to Frederick Hoffmann, a statistician of authority, the mortality among the negroes is on the increase, whereas that of the whites is diminishing. The same writer states that the colored race is subject to a greater mortality from all diseases of infancy, consumption at all ages, pneumonia, venereal diseases, and even malaria.

Before attempting to analyze the more important skin diseases in the two races, it may be well to remind you of certain anatomical differences in the skin, to which doubtless some of the disproportion in frequency and severity of different skin affections is due. It is well known that the characteristic

pigmentation of the negro skin is not present at birth. In speaking of negro babies, Brodnax says, "They are not of the clear pink of the pure Caucasian, but present a color of tallow, a muddy white, not colored or tinted. In cases in which both parents are true blacks, the deepening of the color is seen in a few hours, and in a couple of weeks, the skin is quite dark, attaining its full depth in about two months." Simonot states that the negro acquires the maximum of his color at puberty, and that old age leads frequently to a certain decoloration of the skin. The light color of the palms and soles, lateral borders of the fingers and portions of the mucous membrane of the mouth, prepuce, and vulva, approaches closely to that of the white. The deeper pigmentation is seen upon the posterior portion of the trunk, shoulders, loins, buttocks, and upper portions of the thighs. The difference in pigmentation is simply one of amount and distribution.

The entire skin of the negro, especially the derma, is thicker than that of the white. This is also true of the subcutaneous tissue as exemplified by the characteristic thick lips of the negro.

It is in the appendages of the skin that some of the racial differences are most striking. The glandular system is certainly more highly developed in the negro. The greater production of sweat is largely responsible for the suppleness of the negro skin and aids him to endure the intense heat of the tropics. The sebaceous secretion gives to the skin its shiny aspect and characteristic odor.

The short kinky hair next to his dark skin is the negro's most characteristic feature. To the slight development of lanugo hair is largely due the soft velvety feeling of the negro skin. The lessened hairy development is also seen in the hair of the beard, axilla, and pubes. Finally, it should be mentioned that the negro is decidedly less susceptible to pain than the white man.

I should like to begin my analysis with a consideration of the effect upon the negro skin of external irritants. Among the latter should be included the sun's rays and other forms of radiant energy, as well as various irritants of vegetable

and mineral origin. There seems no doubt that to most forms of external irritation, the negro skin is decidedly less susceptible than that of the white. A hot sun which will severely burn the white skin will have no effect upon that of the negro. Dr. Boyd of Jacksonville writes me that he considers it very difficult to "blister a pure negro." It would be interesting to know whether the reaction to the X-ray was slower in making its appearance, or milder in the negro than in the white. My experience in treating negroes with the X-ray has been very limited, and I have unfortunately not obtained expressions of opinion upon this subject from my correspondents. My statistics for cases designated as dermatitis and dermatitis venenata (affections due to external irritants), give a total of one hundred and thirteen whites to fifty-six blacks, or just twice as many whites as blacks.

An example of lessened susceptibility to vegetable irritants is given by my statistics for poison by the rhus toxicodendron, which showed twenty-two cases in the white against eight in the black. While these figures show a much greater prevalence of ivy poisoning in the white, the disproportion in my opinion would have been much greater in a comparison of whites with full-blooded negroes. In replying to the question, "Is the negro immune to ivy poisoning?" the answer, "I have never seen a case," or "I have never seen a case in a full-blooded negro," has been given by a majority of my correspondents. Many add that they frequently see ivy poisoning in the white race. Four have answered "no," without any further qualification. Dr. Whitehead of Atlanta and Dr. Engman of St. Louis, both write that they have seen some severe cases. Others answer, "almost immune," or "nearly so." Dr. Strobel of Baltimore, answers "not immune, but cases very uncommon, so much so that one severe case I saw in a negro boy impressed me." Dr. Bernard Wolff of Atlanta, writes me of a railroad contractor who employed one hundred and fifty negroes in a region where poison ivy abounded. Not one of these men suffered from ivy poisoning. In the statistics of Morison, and in those of Dyer, no cases of ivy poisoning in the negro are recorded.

TABLE I

ABSCESS—FROST-BITE

| Disease | Clinic | WHITES | | | NEGROES | | |
|---|---|---|---|---|---|---|---|
| | | Total Patients Applying | Cases | Percentage | Total Patients Applying | Cases | Percentage |
| Abscess, carbuncle, furuncle, furunculosis, phlegmon | Surgical | 4072 | 750 | .184 | 6873 | 1056 | .153 |
| Frost-bite and chilblains | Surgical and Skin | 6272 | 26 | .00414 | 9073 | 78 | .00859 |

Statistics compiled from Central Dispensary of Washington, D. C., for nine consecutive years, 1898 to 1906.

In considering the probable effect of heat and cold upon the negro skin, it would be natural to expect that eruptions due to heat would be less common in the negro, and that frost-bite and chilblains the result of cold would be more common. As a matter of fact, this is rather strikingly shown by my statistics. There were twelve cases of miliaria and heat rash in the white and only two in the black. On the other hand only one white as against fourteen blacks appears under the heading of frost-bite and chilblains. The latter figures must, however, be modified, as the majority of cases of frost-bite at the Central Dispensary, at least, were treated in the surgical clinic. I have, therefore, tabulated the cases of frost-bite and chilblains that applied at the latter clinic during nine years. Added to the other cases, a total of twenty-six white and seventy-eight blacks is given, or when the total number of patients is considered, the proportion of blacks to whites was two to one. Morison considers chilblains a common disease in the negro, his statistics giving ten cases in the black and three in the white. If chilblains are more prevalent in the negro, and I believe that they are, a reasonable explanation would be that negroes are more exposed, and more poorly clad and housed than their more fortunate white brethren.

In an effort to compare the susceptibility of the two races

to the ordinary pus germs, the different varieties of the staphylococci, I have tabulated cases designated as phlegmon, abscess (tuberculous, ischio-rectal and alveolar being excluded), furuncle, furunculosis, and carbuncle. My figures, which are taken from the surgical clinic of the Central Dispensary for nine years, show seven hundred and fifty whites, and one thousand and fifty-six blacks, or in proportion to the attendance of the two races, eighteen per cent. for the whites and fifteen for the blacks. A similar table of Matas containing nearly half as many cases gives almost exactly the same proportion for the two races. The mortality, however, is stated as being three times as great in the negro. Tiffany's statistics show fifty-seven per cent. of abscess for the white and forty-three per cent. for the black. Kinloch says, "I think suppuration in the pure black is less than in the white." On the other hand, Richardson's table, from a much smaller number of cases shows abscess to be nearly twice as common in the negro as in the white. Corson also thinks the negro has a greater susceptibility to pus cocci. My statistics would, however, seem to bear out the conclusion of Matas that "Blacks are not more subject and possibly less so to acute circumscribed and pyogenic infections." The figures in my table for furunculosis alone show a rather striking disproportion with fifty-two cases in the white and only fifteen in the black.

If it is conceded that erysipelas, contagious impetigo, and ecthyma are due to infection by the streptococci, it would appear from my figures that the negro shows a lessened susceptibility to this organism. Of these combined affections two hundred and twenty-nine were present in whites and one hundred and eighty in blacks. Richardson's table for erysipelas shows practically the same proportion in the two races, while the figures of Matas give seventy per cent. in the white and forty-two per cent. in the black with again a higher mortality for the latter.

A study of the more important inflammatory diseases of the skin, show, I think, some interesting differences in the two races. I have been greatly surprised to find in my statistics, the comparatively large total of one hundred and one cases of acne in the black as opposed to one hundred and sixty-three in the white. If mulattoes could

have been excluded from my table, I am sure a much greater disproportion in favor of the blacks would have resulted. I have for some time scrutinized every negro seen on the street, as well as in the clinic, and am of the opinion that in New York, acne of the face is decidedly uncommon in the full-blooded negro. It may be well to mention that the negro population of our city is somewhat over sixty thousand, and is only exceeded by that of Washington, Baltimore, New Orleans, and Philadelphia. I feel very certain of the fact that acne in the negro is a milder affection than in the white, an opinion with which most of my southern colleagues entirely agree. Well marked cases of acne indurata in the dark race are indeed rarities. While my figures for acne in the blacks show four and six-tenths per cent. of the total cases of skin diseases, Dyer's show only one and nine-tenths per cent. and Morison's one and eight-tenths per cent., all of the latter's cases, nine in number, being mulattoes. Only six cases of acne, of which four occurred in whites, are given in the report of Rufz, a French physician, who practised medicine for twenty years in Martinique. The careful observations of Rufz in a country where there were roughly sixteen times as many blacks as whites, form a most valuable contribution to the dermatological literature of the negro.

TABLE II.

SKIN DISEASES (2200 Whites and 2200 Blacks.)

| | WHITES | | BLACKS | |
|---|---|---|---|---|
| | Cases | Percentage | Cases | Percentage |
| Acne | 163 | .074 | 101 | .046 |
| Alopecia | 12 | .0054 | 1 | .00045 |
| Alopecia Areata | 10 | .0045 | 10 | .0045 |
| Callositas | 1 | .00045 | 3 | .00136 |
| Chloasma | 9 | .0041 | 4 | .0018 |
| Clavus | 2 | .00091 | 8 | .00363 |
| Dermatitis | 89 | .0404 | 50 | .0227 |
| Dermatitis Herpetiformis | 5 | .00227 | 3 | .00136 |
| Dermatitis Medicamentosa | 7 | .00318 | 3 | .00136 |
| Dermatitis (Rhus) | 22 | .01 | 8 | .00363 |
| Dermatitis Venenata | 24 | .0109 | 6 | .00272 |
| Dysidrosis | 3 | .00136 | 2 | .00091 |
| Ecthyma | 28 | .0127 | 16 | .00727 |

TABLE II—*Continued*

SKIN DISEASES (2200 Whites and 2200 Blacks.)

| | Whites | | Blacks | |
|---|---|---|---|---|
| | Cases | Percentage | Cases | Percentage |
| Eczema | 490 | .222 | 521 | .236 |
| Eczema Seborrhœicum | 28 | .0127 | 28 | .0127 |
| Epithelioma | 22 | .01 | 2 | .00091 |
| Erysipelas | 4 | .0018 | 10 | .0045 |
| Erysipeloid | 10 | .0045 | 2 | .00091 |
| Erythema and E. Hyperæmicum | 4 | .0018 | 0 | |
| Erythema Multiforme | 21 | .0095 | 10 | .0045 |
| Erythema Nodosum | 2 | .00091 | 3 | .00136 |
| Favus | 3 | .00136 | 4 | .0018 |
| Folliculitis | 5 | .00227 | 9 | .0041 |
| Frost Bite and Pernio | 1 | .00045 | 14 | .00636 |
| Furunculosis | 52 | .0236 | 15 | .00681 |
| Herpes Simplex | 6 | .00272 | 5 | .00227 |
| Hyperidrosis | 7 | .00318 | 3 | .00136 |
| Ichthyosis | 4 | .0018 | 1 | .00045 |
| Impetigo Contagiosa | 197 | .0895 | 154 | .070 |
| Intertrigo | 4 | .0018 | 0 | |
| Keloid | 1 | .00045 | 10 | .0045 |
| Keloid Acne | 1 | .00045 | 10 | .0045 |
| Keratosis | 4 | .0018 | 4 | .0018 |
| Lichen Planus | 12 | .0054 | 8 | .00363 |
| Lupus Erythematosus | 5 | .00227 | 4 | .0018 |
| Lupus Vulgaris | 4 | .0018 | 2 | .00091 |
| Miliaria and Heat Rash | 12 | .0054 | 2 | .00091 |
| Paronychia | 3 | .00136 | 7 | .00318 |
| Pediculosis Capitis | 54 | .0245 | 5 | .00227 |
| Pediculosis Corporis | 15 | .00681 | 20 | .00909 |
| Pediculosis Pubis | 5 | .00227 | 2 | .00091 |
| Pityriasis Facei | 2 | .00091 | 4 | .0018 |
| Pityriasis Rosea | 7 | .00318 | 6 | .00272 |
| Pruritus | 3 | .00136 | 8 | .00363 |
| Pruritus Senilis | 11 | .0050 | 22 | .010 |
| Psoriasis | 49 | .0222 | 10 | .0045 |
| Purpura Simplex | 7 | .00318 | 1 | .00045 |
| Rosacea | 25 | .0113 | 1 | .00045 |
| Rubeola | 1 | .00045 | 4 | .0018 |
| Scabies | 243 | .1104 | 170 | .0772 |
| Seborrhœa | 18 | .00818 | 23 | .0104 |
| Sycosis | 16 | .00727 | 9 | .0041 |
| Syphilis | 279 | .1268 | 595 | .2070 |
| Tinea Barbæ | 5 | .00227 | 4 | .0018 |
| Tinea Capitis | 17 | .00772 | 56 | .0254 |
| Tinea Circinata | 22 | .01 | 13 | .00590 |
| Tinea Versicolor | 16 | .00727 | 18 | .00818 |
| Ulcus | 2 | .00091 | 7 | .00318 |
| Ulcus Varicosus | 7 | .00318 | 9 | .0041 |
| Urticaria | 38 | .0127 | 62 | .0281 |
| Varicella | 6 | .00272 | 17 | .00772 |
| Variola | 1 | .00045 | 4 | .0018 |
| Verruca | 5 | .00227 | 8 | .00363 |
| Vitiligo | 4 | .0018 | 6 | .00272 |
| Zoster | 28 | .0127 | 31 | .01409 |

Two cases of the following diseases noted in whites—percentage .00091: Adenoma sebaceum, carbuncle, cyst (sebaceous), erythema nodosum, erythema scarlatiniforme, hæmangioma, nævus unius lateris, papilloma.

Two cases of the following noted in blacks: Angioneurotic œdema, dysidrosis, fibroma, keratosis pilaris, molluscum contagiosum, papilloma, pityriasis, prurigo, scrofuloderma.

One case of the following noted in whites—percentage .00045: Acne frontalis, acne necrotica, angioma (infectious), balanitis, callositas, fibroma, herpes iris, nævus, onychia, pemphigus, prurigo, pruritis scroti, pruritus vulvæ, purpura (Henoch's), purpura hæmorrhagica, rötheln, scarlatina, seborrhœal wart, stomatitis, urticaria pigmentosa, verruca necrogenica.

One case of the following noted in blacks: Ainhum, blastomycosis, carbuncle, dermatitis calorica, cornu cutaneum, gangrene, herpes iris, leukoplakia, lichen ruber, lichen scrofulosorum, morphœa, mycosis fungoides, nævus, œdema (wooden), Paget's disease, pemphigus, pruritus ani et vulvæ, purpura (Henoch's), rötheln, sarcoma, stomatitis, sudamina, thrush, tuberculosis of nose.

That eczema is a common affection in the negro appears from my figures of four hundred and ninety cases in the white and five hundred and twenty-one in the black. It is the most common disease in Martinique, according to Rufz. Twenty-three per cent. of the total number of blacks in my table suffered from eczema. Morison's table gives nineteen per cent. and Dyer's fifteen per cent. for the same disease. It is probable that the presence of mulattoes influences, to some extent, my apparently high figures. The majority of my southern colleagues consider eczema to be less frequent in the negro. Practically all agree that it is less severe. Dr. Carmichael writes, "It is equally frequent, but less severe." Morison finds acute eczema much less severe in negroes, while the chronic form appears the same as in the white, except that itching is less acute. In answer to the question, "Have you ever seen a case of universal eczema in the negro?" a few of my correspondents have answered in the affirmative.

Two of these cases occurred in patients suffering from diabetes.

My table records four cases designated as erythema and erythema hyperæmicum in whites and none in blacks. Erythema multiforme appears twice as common in the white, twenty-one cases being recorded for the former against two for the latter. There are two cases of erythema nodosum in the white and three in the black, and a single case of herpes iris is recorded for each race.

Lichen planus, which from my experience I would have concluded to be fully as frequent in the black as in the white, appears two-thirds as frequent in my figures, which show twelve cases in the white and eight in the black. A single case of lichen ruber (the pityriasis rubra pilaris of the French), is recorded as occurring in a negress, no case having been noted in the whites. An illustration showing the papular stage of this rare affection appears in my exhibition of photographs.[1] (Plate ix, Fig. 2.)

A comparative analysis of psoriasis in the two races brings to light some facts that I think are perhaps not generally known. On a number of occasions my father has called attention to the comparative immunity of the negro to psoriasis. At a recent meeting of the British Medical Association, in discussing a paper by Dr. Hyde, he further expressed the view that "possibly the savages of Africa were free from psoriasis on account of exposure of the skin to sunlight, and that the negroes of North America inherited this peculiarity." At the same meeting, Dr. Corlett of Cleveland, stated that he had "never seen psoriasis in the negro, although he had seen many skin diseases in this race." My figures for psoriasis show forty-nine cases in the white and ten in the black. Morison observed twenty-six cases in the white and six in the black, four of the latter cases, however, being mulattoes. Dyer's table gives two cases out of a total of five hundred and fifty-six. Stated proportionally, in ten thousand cases my figures would have shown two hundred and twenty-two whites and forty-five blacks. Morison's table would have

[1] A photographic exhibition of skin diseases in the negro. Shown at the International Congress of Dermatology.

given a hundred and twenty blacks and Dyer's thirty-six. Great as is this disproportion in favor of the blacks, it would certainly have been very much greater if mulattoes could have been eliminated from the column of blacks. In his entire experience at Martinique, Rufz stated that he never saw a single case of psoriasis in the negro. The question addressed to my correspondents, "Have you seen many genuine cases of psoriasis in full-blooded negroes?" should, in the light of my present knowledge, have read, "Have you ever seen a single case?" With two exceptions, all have answered this question in the negative, many volunteering the information that they had seen no cases. "Once only," writes Dr. Grindon, "in twenty-four years of active dermatological practice have I seen psoriasis in a negro, and then I was not absolutely certain of my diagnosis." Dr. Dyer answers, "I have seen but one case of psoriasis in the negro in fifteen years of practice." Dr. Rosenthal writes, "Classifying all negro descendants as negroes, I have six cases in four hundred and eighty. None of these were in the real black kinky-headed African, but all in mulattoes." Dr. Gilchrist answers, "A few cases," and Dr. Brinkley of Savannah says, "I have not seen a single case or even a condition suggesting psoriasis." In marked distinction to these answers is that of Dr. Strobel of Baltimore, who states that he has seen "probably twenty cases." I have been unable to learn what proportion of Dr. Strobel's cases were mulattoes. In Morison's experience, psoriasis, when it does occur, is easily cured and does not relapse.

Twenty-five cases of rosacea in the white to one in the black constitute a ratio that is indeed striking. One case only is recorded in Dyer's tables, while Morison's table of blacks fails to show a single case. While the beginning stages of rosacea could well pass unnoticed, the same would not be true of the latter, especially the hypertrophic stages. Personal observation of negroes upon the street and in the clinic leads me to the conclusion that rosacea in the dark race is indeed a rare affection.

Sycosis was seen sixteen times in the whites and nine times in the blacks. One case was recorded in Dyer's and one in Morison's table. I have observed the tendency to the

formation of tiny keloidal tumors in several cases of sycosis in the negro, which is not unusual considering the great tendency to keloid of this race.

Urticaria would appear to be the only inflammatory disease of the skin that is considerably more frequent in the negro than in the white, my figures showing thirty-eight cases in the white and sixty-two in the black. Dyer's table, however, shows the small number of two cases, while Morison records eleven whites and seventeen blacks. From my experience, I would not consider urticaria of greater frequency in the negro. I feel sure that it is less severe.

Zoster occurred twenty-eight times among the whites and thirty-one times among the blacks. My experience agrees with Morison's statement, that this affection is less painful in the negro.

A study of tuberculosis of the skin tends to strengthen my view that the negro is less susceptible to skin diseases than the white. From innumerable sources it can be shown that pulmonary tuberculosis, and to a less extent other forms of the disease, are more frequent in the negro than in the white race. In view of these facts it may seem strange that my figures for lupus vulgaris, a typical form of cutaneous tuberculosis, record four cases in the white and only half as many in the black. A glance at my column for negroes shows, however, one case designated as tuberculosis of the nose, two cases of scrofuloderma, and one of lichen scrofulosorum. Adding thereto the two cases of lupus, a total of six cases of tuberculous affections in the negro is given. This is partly offset by one case of verruca necrogenica in the white column, which brings the white total to five cases of tuberculous disease. These revised figures of six blacks and five whites are very small from which to draw conclusions. It seems to me, however, that in view of the great prevalence of tuberculosis in the negro, there should have been considerably more cases of cutaneous tuberculosis. That there were not, appears further proof of a lessened susceptibility of the negro to diseases of the skin.

It is with a proper realization of its magnitude that I approach the subject of syphilis in the negro. It may be well at the start to call attention to certain changed conditions

between the negro of slavery times and the negro of to-day. I agree with certain writers who claim that from a physical standpoint the negro slaves were infinitely better off than are their descendants of to-day. Slaves, being valuable property, were treated as such and were well fed, housed, and clothed. They were further absolutely kept from dissipation. When freedom came, all was changed. Close crowding in poorly ventilated houses, poor clothing and food, and failure to observe the ordinary laws of hygiene are the causes that have changed them, as McHattan says, from the most healthy race in the country forty years ago, to the most diseased one to-day. An utter lack of morality (Quillian stating that in a practice of sixteen years he had never examined a negro virgin over fourteen), a strong sexual instinct, and lack of cleanliness seem all that are necessary to have brought about a widespread infection with syphilis.

That syphilis in the negro is not only very prevalent, but more so than in the white, is one point upon which the majority of writers, my correspondents, and statistics agree. My table shows two hundred and seventy-nine cases of syphilis in the white and five hundred and ninety-six cases in the black, or twelve and twenty-seven per cent. respectively of the totals for each race. Morison gives sixteen and twenty-three per cent. respectively for both races, and Dyer twenty-six per cent. for blacks. Matas shows a proportion in a thousand cases of twenty-eight whites to fifty-one blacks. I have compiled a second table from the Central Dispensary reports for nine years, including all cases of syphilis which were treated in the clinics for medicine, surgery, children, gynecology, throat and chest, skin, genito-urinary, and nervous diseases. In a total of fifteen thousand whites, in round numbers, there were six hundred and twenty-one cases of syphilis, while in a total of thirty-two thousand blacks, there were roughly nineteen hundred cases of syphilis. In other words, while there were two blacks to one white who applied for treatment, there were three blacks to one white suffering from syphilis. To be exact, the blacks suffered 1.46 times as often as the whites. From all these figures I think it can safely be inferred that syphilis, if not almost universal as Murrell

claims, is at least more prevalent in the negro than in the white race.

The question of the relative severity of syphilis in the two races is a much more difficult one than that of relative frequency. That acquired syphilis is not more virulent in the negro, but possibly less so, I am inclined to think from the following reasons. First—that the primary and secondary manifestations do not appear to be more severe. Second—that tertiary manifestations do not seem to be more common. Third—that in the negro the disease seems more amenable to treatment.

It may be stated, as a general rule, that negroes do not realize the importance of syphilis and are rarely willing to continue treatment after visible manifestations have disappeared. When they do submit to treatment, the disease responds more readily, I think, than in the white race. In speaking of syphilis, Byers writes, "It is more amenable to treatment than in the white race." According to Powell, "The disease is far more amenable to treatment in the negro than in the white, the cases yield readily, and the cures are more permanent and satisfactory." "Twenty-eight years of experience in the practice of medicine in the South," writes Dixon, "have convinced me that the only difference in the two races is that the disease yields more kindly to treatment in the negro race."

A greater tendency to pustulation in secondary syphilis of the negro might be considered proof of its greater virulence in this race. Atkinson, in speaking of his cases of pustular syphilis in a paper on early syphilis in the negro, says the "course of the pustular eruptions was uniformly benign," and further, "the presence of pustulation was no evidence of special severity of the disease and generally no unusual refractoriness to treatment was encountered."

In an attempt to see whether some of the severe tertiary lesions of syphilis were more frequent in the negro than in the white, I have tabulated cases from the surgical clinic of the Central Dispensary designated as syphilitic ulcer (most of them situated upon the leg). It has given for this form of tertiary syphilis a proportion of one hundred and fifty-four

cases in the black to one hundred in the white. A similar table from the throat clinic, comprising cases of syphilitic ulceration of the larynx, pharynx, palate, and nasal bones (the majority presumably tertiary), gave a proportion of only one hundred and thirty-one blacks to one hundred whites. Figures from the clinic for nervous diseases show a proportion of three hundred and sixty-six cases of cerebral syphilis in the black to one hundred in the white, and on the other hand only one hundred and four cases of locomotor ataxia in the black to one hundred in the white. Hecht has called attention to the fact that, although syphilis is extremely prevalent in the negro, locomotor ataxia is rare in this race. As my table of eight clinics showed the proportional frequency for all cases of syphilis to be one hundred and forty-six blacks to one hundred whites, it is seen that, with the exception of the cerebral syphilis, the tertiary lesions

TABLE III

SYPHILIS

| Disease | Clinic | WHITES | | | NEGROES | | |
|---|---|---|---|---|---|---|---|
| | | Total Patients Applying | Cases | Percentage | Total Patients Applying | Cases | Percentage |
| Grand total of all cases of syphilis | Eight different clinics | 15,672 | 621 | .0396 | 32537 | 1895 | .0582 |
| Syphilitic ulcer, leg | Surgical | 4,072 | 70 | .0171 | 6873 | 182 | .0264 |
| Syphilitic ulceration of pharynx, larynx, palate, and nasal bones | Throat | 2,152 | 82 | .038 | 4700 | 235 | .05 |
| Cerebral syphilis | Nervous | 990 | 15 | .015 | 739 | 41 | .055 |
| Locomotor ataxia | Nervous | 990 | 9 | .0090 | 739 | 7 | .0094 |
| Congenital syphilis | Children | 2,954 | 23 | .0077 | 4631 | 81 | .0181 |

Statistics from Central Dispensary, 1898 to 1906. (Congenital syphilis, 1897 to 1906.)

mentioned above did not show any unusual frequency in the negro. The writer is fully aware that the figures are smaller and only deal with a few phases of such a varied disease as tertiary syphilis. They cannot do more than convey a suggestion as to the virulence of this disease.

In expressing an opinion upon the severity of syphilis in the negro, I have had in mind only the acquired form of the disease. That the hereditary form is more virulent and is an important factor in raising the negro mortality, I think probable. According to Hoffmann, the mortality from premature and still births, is greater in the negro than in the white. Corson writes: "I believe the direct mortality from syphilis in the negro is chiefly to be found in the ante-natal mortality and in that of early babyhood." A table compiled from the children's department of the Central Dispensary shows, in an equal number of patients, two and a third times as many hereditary syphilitic children in the blacks as in the whites.

In answer to the question "Is syphilis more virulent in the negro?" the majority of my correspondents have answered in the negative, and some have added, "less virulent." Certain others, however, whose opinions carry great weight, consider syphilis in the negro to be more virulent.

Surgeon Carter, in a comparative study of two hundred and thirty-one cases of syphilis in the two races, concludes that the disease pursues a milder course in the negro than in the white. In speaking of the negro, Kinloch says, "I do not think he is affected to the same extent (as the white) by syphilitic poison." Quillian writes, "One thing is certain, the lesions are not as severe in the black as in the white race." Although the figures of Matas give a mortality three times as great for the blacks as for the whites, he concludes that "if the mulattoes could be eliminated from the calculation the results would prove, other conditions being equal, syphilis to be less virulent and less fatal in the pure negro than in the white.

In considering some of the peculiarities of syphilis in the negro, attention is first called to those of the initial lesion. According to Morison, the chancre is attended by a greater amount of induration. Lofton states that it has been his experience to "observe as a rule double chancre (especially

when located upon the genitalia or its covering) in the negro subject." Multiple chancre occurred in seventeen out of forty-five cases reported by Atkinson. The latter writer lays stress upon the modification of syphilis in the negro due to the great prevalence of scrofula. This is seen, for instance, in the marked inflammatory action of the glands in relation to chancre.

That general enlargement of the lymphatic glands is more constant and more marked in the negro, no one, I think, will dispute. In Dr. Carter's table, enlarged glands were noted in fifty-nine whites and in one hundred and two blacks. Tiffany states, "Enlargements of lymphatic glands are apt to be marked in the syphilitic negro compared with the white race." That the pustular syphilide in the negro is somewhat more common than in the white seems probable. According to Tiffany, "excessive pus formation occurs in the negro not only with scrofulous affections but with syphilitic as well." Carter states that in the negro syphilis is marked by few cutaneous lesions, and these mainly pustular. A peculiar appearance has been observed by Taylor in two cases of papular syphilis in the negro. The eruption consisted of large flat papules, "nearly of a snow-white in spots where the skin was kept clean, and of a dirty-white elsewhere." Reference to lesions of the mucous membrane and to the occurrence of pruritus in syphilis will be made later.

If I were asked what I considered from my experience to be the most striking dermatological peculiarity of the negro, I would say without hesitation, the annular syphilide. (See Plate x, Figs. 3, 4, 5 and 6.) This form of syphilis, it seems to me, should be classed with keloid and elephantiasis as affections that are very common and distinctive in the negro. Comparatively little has been written about the annular syphilide, and still less on its relation to the negro. The subject has been ably discussed by Atkinson in a paper entitled "Syphiloderma Papulosum Circinatum." This title well describes the condition to which I have reference, the lesions being simply flat papules that have cleared up in the centre and then left elevated rims to form various-sized circles. The eruption, as you well know, is one of the early period of syphilis,

and is to be sharply differentiated from the circinate grouping of tubercles of late syphilis. I have seen the annular syphilide most often about the nose and mouth, though it may also occur on the trunk and upper extremities. Though I have seen the eruption only in the form of partial or complete circles or festoons, it may assume extremely fantastic designs resembling scrollwork, an example of which is shown in the extraordinary photograph kindly given me by Dr. Carmichael. A somewhat similar though less well-marked illustration is shown by Jullien in his *Maladies Vénériennes*. Fine illustrations of the annular syphilide are to be seen in the atlases of Wilson, Taylor, Morrow, and Pringle, but no reference is made to the disease in the negro. Photographs of the annular syphilide in the negro appear in the text-books of Stelwagon and Pusey, and both of these writers state that the disease is more common in the black than in the white. In my statistics obtained from the Johns Hopkins Dispensary, out of a thousand consecutive cases of skin disease in the white there were seventy-two cases of syphilis, none of them presenting the annular form of the disease. In the corresponding one thousand cases in the negro, there were one hundred and ninety-three cases of syphilis, eleven of which, or .057 per cent., presented examples of the annular syphiloderm. Finally, it may be remarked that the diagnosis is uniformly easy, though to one unfamiliar with these lesions the eruption might readily be mistaken for the annular form of erythema multiforme or for ringworm.

Of the benign tumors of dermatological interest, I should like to call your attention to one that is characteristic of the negro, namely, keloid. In an effort to obtain as large figures as possible upon this subject, I have tabulated the cases from the surgical and from the ear departments of the Central Dispensary. These figures, added to those of my general table, give a total of three cases of keloid in the white, and the rather surprising number of seventy-six cases in the black. In proportion to the total patients of each race treated in these clinics, keloid was eighteen and seven-tenths times more frequent in the negro than in the white. The figures of Matas from a small number of cases show keloid to be nine

times as frequent in the negro. Morison's table gives three cases in the pure black and none in the mulattoes or whites.

TABLE IV

TUMORS

| Disease | Clinic | WHITES | | | NEGROES | | |
|---|---|---|---|---|---|---|---|
| | | Total Patients Applying | Cases | Percentage | Total Patients Applying | Cases | Percentage |
| Angioma..... | Surgical and skin | 6,272 | 1 | .000159 | 9,073 | 3 | .00033 |
| Carcinoma.... | Surgical and skin | 6,272 | 13 | .00207 | 9,073 | 16 | .00176 |
| Epithelioma.. | Surgical and skin | 6,272 | 46 | .00733 | 9,073 | 5 | .00055 |
| Fibroma..... | Surgical and skin | 6,272 | 7 | .00111 | 9,073 | 14 | .00154 |
| Keloid..... | Ear, Surg. and skin | 8,382 | 3 | .00035 | 11,486 | 76 | .0067 |
| Lipoma..... | Surgical and skin | 6,272 | 5 | .00079 | 9,073 | 39 | .00429 |
| Papilloma.... | Surgical and skin | 6,272 | 22 | .00350 | 9,073 | 27 | .00298 |
| Sarcoma..... | Surgical and skin | 6,272 | 7 | .00111 | 9,073 | 12 | .00132 |

Statistics from Surgical Clinic of Central Dispensary, 1898 to 1906, plus figures given in Table II. Statistics for keloid contain in addition cases from Ear Clinic, 1898 to 1906.

Dyer states that in two thousand five hundred and thirty-eight cases of skin disease, twenty-one per cent. of which were negroes, he observed five cases of keloid in whites and only three in blacks. The small number of cases in the negro was explained by Dr. Dyer from the fact that the negro rarely seeks medical assistance unless compelled to do so by unbearable conditions. Balloch calls attention to the fact that in the statistics of the American Dermatological Association for keloid, although no mention is made of color, the

majority of cases are reported from cities having a large negro population. The same writer saw nine cases of keloid in one hundred and fifty-two blacks and no cases in three hundred and ninety-two whites. The statistics of James C. White give fifteen cases of keloid in ten thousand American dispensary cases, among which were doubtless many negroes. There were five cases of keloid in ten thousand Scotch patients, and none in three thousand Irish patients, all of which were presumably white. In twenty-three thousand nine hundred and forty-four cases from the Vienna Clinic, one case only of keloid was reported. That the lobule of the ear is a very favorite site for keloid is seen from my figures, which record for this situation twenty-four cases, eighteen of which were females. Scheppegrell, in eleven thousand eight hundred and fifty-five cases of diseases of the nose, throat, and ear, found eight cases of keloid of the lobule, seven of which were negroes, one a mulattress and one a white person.

From all of these figures it can readily be seen why keloid is so often classed as one of the three common and distinctive diseases of the negro, the others, as you know, being elephantiasis and uterine fibroid. According to Balloch, fibroid processes as represented by these three affections are so much more common in the negro that they constitute a racial peculiarity.

In connection with keloid I should like to remind you of the frequency in the negro of an allied affection, the so-called keloid acne or dermatitis papillaris capillitii of Kaposi. That this disease is very common in the negro as compared with the white, is seen from my figures giving ten cases for the former and only one for the latter. A number of illustrations of this peculiar condition are to be seen in my exhibition of photographs. (Fig. 1, Plate ix, Figs. 7 and 10, Plate xi.)

A glance at my table of tumors, which is unfortunately of very meagre proportions, shows papilloma to be about equally frequent in the two races. Angioma is twice as frequent, and lipoma nearly five and one-half times as frequent in the negro as in the white. Of the malignant growths, sarcoma is slightly more common and carcinoma slightly less common in the negro than in the white.

It is not my intention in this paper to discuss the general subject of cancer in the negro. I wish merely to call attention to that form of malignant growth of such importance to the dermatologist, namely, cutaneous epithelioma. In this affection we appear to have another example of the lessened susceptibility to skin diseases that is enjoyed by the negro. Epithelioma in my table appears thirteen and three-tenths times as often in the white as in the black. In Tiffany's statistics there is not a single case of epithelioma of the face or lip of a negro. Yandell stated that he had never seen an epithelioma on the face of a negro. Christopher Johnston said that he had only infrequently met with epithelioma in the negro race, and nearly all with whom I have corresponded have had a similar experience.

Some very interesting figures and conclusions are given by Hyde upon this subject in a recent contribution on the "Influence of Light in the Production of Cancer of the Skin." The figures which relate to deaths from cancer of the head, neck, and face (practically that of the skin) are taken from the last census reports of two Southern States of about equal population. The returns lack only ten of reporting twice as many fatal cases of cancer in the Northern as in the Southern States. This appears significant when it is considered that half the population of the southern states consisted of negroes. The writer concludes that the physiological pigmentation of the skin in the colored race seems to furnish immunity against cancerosis of that organ. Finally, although firmly convinced that epithelioma in the full-blooded negro is decidedly uncommon, I must in fairness mention the fact that the statistics of Richardson actually show a greater frequency of epithelioma in blacks than in whites.

I have long been under the impression that itching was a more or less characteristic feature of skin affections in the negro. This would appear to be borne out by my statistics giving about twice as many cases of pruritus of different forms in the blacks as in the whites; while the figures of Morison record twenty-four cases of pruritus in pure blacks and five in whites. Since my attention has been specially directed to this subject, I have concluded that, while negroes may

complain of itching more often than whites, the visible results of scratching are certainly much more marked in the latter race. It is probable that the papular syphilide, though giving rise at times to pruritus in the white, is more likely to do so in the negro race.

Of the pigmentary diseases vitiligo appears in my table more frequent among the blacks, the proportion being six blacks to four whites. (Plate xii, Figs. 11 and 12.) Morison's figures show four cases in the black to one in the white. On the other hand, chloasma appears in my table to be twice as common in the white as in the black. That these figures do not represent the actual conditions, I feel perfectly confident. It is natural that a negro with such a striking affection as vitiligo would be more apt to seek medical aid than a white person with the same disease, whereas the conditions would be exactly reversed in the case of chloasma. Atkinson considered that vitiligo was only apparently more common in the negro, not actually so. Chloasma in the pure black would often pass unnoticed. In the mulatto, however, it is noticeable and of more frequent occurrence than in the whites, in my opinion. Rufz stated that chloasma was remarkable for its frequency and extent in mulatto women. Atkinson also considered chloasma to be especially common in those of mixed descent. Whether pigmentation following inflammatory and other lesions is more common in the pure black than in the white, it is difficult to judge for obvious reasons. That it is more common in the mulatto than in the white, I feel convinced.

A comparison of the parasitic diseases in my table shows two hundred and forty-three cases of scabies in the white and one hundred and seventy in the black. There were fifteen cases of pediculosis corporis in the white and twenty in the negro, a rather small number for the latter, considering his uncleanly habits. The figures for pediculosis capitis show a rather striking disproportion, namely, fifty-four cases in the white and only five in the black. This might indicate that the negro scalp is less irritated by the presence of pediculi and that he in consequence does not seek the clinic as often as the white. It may, however, indicate that the negro takes

greater pains in the care of the scalp than the lower class of whites that attend our clinics. Dr. Carmichael informs me that the negro women in Virginia take a special pride in keeping their heads and those of their children free from lice. Dr. Pendergrast, of Memphis, suggests that negro women unconsciously and of necessity employ one of the methods of treating pediculosis, namely, the fine tooth comb. In contrast to the figures for pediculosis are those of tinea capitis, which show seventeen cases in the white and fifty-six in the black. A similar proportion is given in Morison's statistics with fourteen whites and forty-two blacks. Both favus and chromophytosis appear in my table slightly more common in the negro than in the white.

My figures for seborrhœa show eighteen cases in the white and twenty-three in the black. On the other hand there are twelve cases of alopecia in the white and only one in the black, representing in my opinion the relative proportion of baldness in the two races. Alopecia areata appears ten times in both races, a rather high proportion for the blacks, it appears to me. It is well known that canities makes its appearance considerably later in the negro than in the white, marked grayness being a sure sign of advanced age in the former race.

It may not be out of place in this paper to show some evidence that the mucous membrane of the negro shares with the skin a lessened susceptibility to disease. According to T. E. Murrell, "In the adult negro nasal and pharyngeal diseases are quite infrequent." Scheppegrell states, "In the diseases of the nose we find a proportionately small number of negroes affected." The same writer gives some figures showing the proportion of diseases of the mouth and tongue to be forty-two blacks to one hundred whites. Carter states that the mucous membranes of the negroes are less vulnerable to syphilis than those of the white. In his table of syphilitic lesions of the mouth and fauces there were thirty-nine cases of hyperæmia of the fauces in the white and only six in the negro, though the writer admits that this condition is probably more common than is here indicated. There were, however, thirty-one cases of mucous patch in the white and none in the black, a disproportion that is indeed striking.

My attention has lately been called to the rarity of leukoplakia in the negro, while studying a case of leukoplakia buccalis which I have been fortunate enough to have under my charge. (See Figs. 8 and 9, Plate xi.) I have again called upon my correspondents for aid and addressed the question, "Have you seen many cases of leukoplakia in the negro?" As in the case of psoriasis, the question should have read, "Have you ever seen a single case?" Most of my colleagues answered simply "No." Four stated that they had seen several cases. Dr. Carmichael had seen "one case in a full-blooded negro," while such good observers as Drs. Dyer, Engman, Grindon, and Mastin stated that they had never seen a case of leukoplakia in the negro. I have been unable to find any reference in text-books on dermatology or syphilis to this peculiar immunity enjoyed by the negro.

That the negro may suffer as well as the white man from some of the rarer diseases of the skin, is seen from my list of affections in which one case of each disease was recorded. Included in this list are blastomycosis, herpes iris, lichen ruber, lichen scrofulosorum, morphœa, mycosis fungoides, Paget's disease, pemphigus, and Henoch's purpura. The case of blastomycosis was one of the two negroes that have been reported by Dr. Gilchrist. The only case of blastomycosis which it has been my fortune to treat is that of a mulatto with a lesion upon the buttock, an illustration of which also appears in my collection. One case of ainhum is recorded in my statistics which, like nearly all of the cases of this peculiar disease, was noted in a negro. My figures, strange to say, do not include a single case of elephantiasis.

A consideration of the exanthemata opens up such a large field for discussion that I have felt it advisable to omit any reference to this subject, and devote my time to those more strictly dermatological.

Finally, I should like to express a single opinion upon the relative susceptibility of the negro and the mulatto to skin diseases. I feel convinced that in general the mulatto is more susceptible to diseases of the skin than the full-blooded negro, this being especially true of acute inflammatory diseases, chloasma, and cutaneous tuberculosis.

CONCLUSIONS

1—In spite of the fact that the negro is more susceptible to disease in general than the white man, and that his mortality is twice as great, he suffers less frequently and less severely from diseases of the skin.

2—The negro skin is decidedly less susceptible to external irritants.

3—The full-blooded negro is almost immune to ivy poisoning.

4—Acne is less common and much less severe in the negro. Rosacea is a rare and very mild affection. Eczema is perhaps not less frequent though certainly less severe. Psoriasis in the full-blooded negro is very uncommon.

5—Tuberculosis of the skin is not more common in the negro in spite of the great prevalence in this race of pulmonary and other forms of tuberculosis.

6—Syphilis is certainly more common in the negro than in the white. It is probably not more virulent. Tertiary forms are not more common. A tendency to the annular syphilide, as well as to keloid, elephantiasis, and fibroma, deserves to be classed as a racial peculiarity of the negro.

7—The negro is more subject to new growths of connective tissue origin and less so to those originating in epithelial structures. Cutaneous epithelioma is very rare in the full-blooded negro.

8—The mucous membranes as well as the skin are less susceptible to disease. Leukoplakia is seen in the negro with extreme rarity.

9—Many of the rarer forms of skin disease are observed in the negro as well as in the white race.

10—Mulattoes are more susceptible to skin diseases than negroes, being especially prone to chloasma.

In closing, I desire to express my thanks to Drs. Gilchrist and Carmichael for their kindness in putting the statistics of their clinics at my disposal. I am also indebted to Dr. Grindon for a long letter containing many valuable suggestions. Finally, I must express my deep gratitude for the assistance

so kindly rendered by my numerous correspondents scattered throughout the South.

## DESCRIPTION OF PLATES

PLATE ix.—FIG. 1. Keloid. Case of Dr. R. J. Devlin of New York.
FIG. 2. Lichen ruber acuminatus.

PLATE x.—FIGS. 3 and 4. Hereditary syphilis, showing the annular form. The mother of this child had also manifested syphilitic lesions.
FIGS. 5 and 6. Acquired syphilis, showing the annular form. Case of Dr. R. B. Carmichael of Washington. Eruption appeared about six months after initial lesion.

PLATE xi.—FIG. 7. Keloid acne.
FIGS. 8 and 9. Leukoplakia buccalis.
FIG. 10. Multiple keloid.

PLATE xii.—FIG. 11. Leukonychia.
FIG. 12. Vitiligo.

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PLATE IX—To Illustrate Dr. Howard Fox's Article.

FIG. 1.

FIG. 2.

PLATE X—To Illustrate Dr. Howard Fox's Article.

FIG. 3.

FIG. 5

FIG. 4.

FIG. 6.

PLATE XI—To Illustrate Dr. Howard Fox's Article.

FIG. 7.

FIG. 8.

FIG. 9.

FIG. 10.

PLATE XII—To Illustrate Dr. Howard Fox's Article.

Fig. 11.

Fig. 12.

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## *Discussion*

DR. ISADORE DYER, of New Orleans, said the subject of skin

diseases in the negro was one which must appeal to all, whether specialist or not, who lived in the southern part of this country, and who came in touch with the inhabitants of the cities of Central and South America.

Dr. Fox's paper should awaken the interest of the profession, in this country, at any rate, to the need of studying skin diseases in the negro in distinction to those observed in the white race. The social condition of the negro in the South was vastly inferior to his condition in the North, and for that reason a comparison of statistics bearing on this subject between these two sections of the country would be of little value. In the South, the negro as a rule did not apply for treatment for a skin condition unless it was disfiguring or caused him suffering. It was not unusual to have a negro present himself for some venereal disease, and reveal, upon examination, a variety of parasitic and other skin lesions.

Dr. Dyer said the annular syphilide, as seen in the negro, especially in young children, was many times partly vesicular. There was an arc of the circle which was quite markedly vesicular in type. The observation had been made in New Orleans that perhaps the only malignant type of syphilis seen there occurred in the negro; only exceptionally in the white. Coming from a section of the country where the negro population was so largely represented as in Louisiana, forming probably one-quarter of the whole population, he again wished to emphasize the importance of a more careful study of skin diseases among the blacks. There were many points in the appearance of the lesions, their color, etc., which had heretofore not been described. Finally, he wished to thank Dr. Fox for the enlightenment and stimulation his paper would bring to those who were working along these lines.

Dr. Joseph Grindon, of St. Louis, said he was very much interested in this subject, coming, as he did, from a city in which there were some forty thousand negroes. He could readily see how the subject was beset with all sorts of difficulties. The first question to be answered in regard to the relative frequency of certain skin diseases in this race was, What is a negro? Properly speaking, and to get the facts strictly correct, the investigation should have been limited to the pure negroes on one side, and the pure whites on the other. This, however, would be impracticable, as there was more or less white blood in so many members of the black race. These patients practically did not figure in private practice, and in dispensary practice they did not present themselves in

anything like the proportion that one would expect. In many instances they treated themselves, or remained untreated.

Dr. Grindon said he was surprised to hear that syphilis was milder in the negro than in the white. His own experience had led him to believe the opposite to be the fact. Among conditions which he had found more common in the black were the papillary form of the tubercular syphilide and the annular papular syphilide. Dermatitis papillaris capillitii he had only seen in the black. Psoriasis he had witnessed once in the negro, and that a doubtful case.

## GANGRÆNA CUTIS HYSTERICA

By Dr. Harvey P. Towle, of Boston

That affection variously named Hysterical Gangrene of the Skin, Spontaneous Gangrene, Multiple Neurotic Gangrene, etc., offers many difficulties in its diagnosis. After excluding the cases due to bacterial infection, arterio-sclerosis, and organic disease of the nervous system, there remains a number of cases some of which are known to have been self-inflicted. Whether those cases *not* demonstrated to be self-inflicted should receive a separate classification has given rise to much discussion. The following conspicuously illustrate the difficulty of the diagnosis of an artificial eruption when no positive proof can be found.

Case 1. Female, 16.

F. H. Mother died of "lung trouble." Father died of heart disease.

P. H. Negative.

Present Illness: In February, 1904, the patient cut her right forefinger with a piece of glass. Four or five days later she suddenly began to have pain which radiated from the wound up the arm to the shoulder. Within fifteen minutes a small black spot appeared on the end of the right forefinger which spread until the whole skin over the terminal phalanx was black. The pain, intense at first, after the color change had reached its height grew less intense, but did not disappear entirely. The next day she went to the Surgical Out-Patient Department of the Boston City Hospital for treatment.

"They scraped it [the spot] and sent her home." The spot was treated with various applications and later, "because the bone had no flesh on it and was of a brownish color," was scraped a second time. After two months' treatment at the Boston City Hospital the patient went to the Homeopathic Hospital when, she said, "the finger had grown black to the second joint and hurt terribly." May 16, 1904, she came to the Surgical Out-Patient Department of the Massachusetts General Hospital. There was at this time on the palmar surface of the end of the right index finger an ulcer with round contour and concave surface whose base was formed by the exposed phalangeal bone. There was no apparent attempt at healing and no induration or inflammatory thickening of the edges of the ulcer or of the joint. On the next day the terminal phalanx was removed under ether and the stump covered in by a flap taken from the back of the finger. Three days later the wound showed slight signs of infection which subsided quickly. The wound was sluggish and was not completely healed until June 13th, about four weeks after the operation. Meanwhile the stump had become painful, apparently from the tight flap. June 21, 1904, the patient was discharged well.

June 23, 1904, she returned with the wound broken down a second time. June 25th, the second phalanx was removed. After the operation the finger became swollen, but not red or painful. The pain became so intense that on July 12, 1904, she was referred to the Nerve Department for treatment. Their notes say that "there was present on the side of the finger end a small, necrotic, dark-colored area the size of a pea, with a moist center. This area was not especially associated with the flap. Diagnosis neuritis." This lesion persisted until the last of September, 1904. When the patient returned October 3, 1904, the amputation wound was found to be healed, but the stump was still painful and tender. The circulation of the hand was poor.

Her next visit was made to the Nerve Department November 3, 1904, when she had a third lesion higher up than the two preceding. (Plate xiii, Fig. 1.) According to her story, at about one P.M. of the preceding day, a small black

spot had suddenly appeared which continued to increase until it was double its original size. "There was over the metacarpo-phalangeal joint a dry, gangrenous area slightly smaller than a ten-cent piece. This area was surrounded by two narrow zones, the inner of a whitish color and the outer pale red. The whole hand was cold and damp and "the girl shrinks from any attempt to touch it." An X-ray photograph showed a marked atrophy of the phalanx. The gangrenous area continued to spread accompanied by severe pains shooting up the arm and across the shoulder.

November 8, 1904, the patient was transferred to the Skin Department, and November 10, 1904, was admitted to the ward for diseases of the skin. The record states that at the time of admission "there was present on the back of the right hand at the base of the index finger and extending over on the inner surface an irregular ulcerated lesion one-half inch by one inch in diameter. Its shape was roughly quadrilateral. Its edges were of a wavy outline, not elevated above the surrounding skin and sloped slightly toward the centre. The base of the ulcer was slightly depressed below the surrounding surface and was covered with a homogeneous, brownish, almost blackish, crust. The inner half of the right hand from the knuckle to the wrist was swollen and slightly erythematous. There was marked tenderness on pressure along a line drawn from the forefinger up the arm."

The patient was an anæmic, rather dull appearing girl, indifferent to her skin affection except that the general bewilderment as to its nature appeared to afford her much satisfaction. No disease of any of the internal organs could be discovered. Nothing abnormal was found in the blood-vessels, and there was no evidence of any organic disease of the nervous system.

The later records state that the ulcer had increased slightly in size when, November 12th, a stiff, starched dressing, which could not be easily removed by the patient, was put over the lesion. Two days later this sealed dressing showed evident signs of manipulation. From November 12th to December 1st, the ulcer remained in the stiff dressing continuously except that it was exposed now and then for observation and then

immediately redressed. Without other treatment the ulcer cleaned up promptly and by December 1st had healed except for one small superficial area. The sealed bandage was then replaced by a simple protective dressing under which the ulcer continued to heal rapidly. December 8th, it was practically well, and the patient was told that she would be discharged on the next day.

When the dressing was removed the next morning there was exposed a round superficial ulcer about one-third of an inch in diameter. That same night the patient, who had been left alone with the thermometer a few minutes, developed an apparent temperature of 101 degrees. As there were no other symptoms accompanying, the nurse immediately replaced the thermometer, remaining beside the bed meanwhile. The temperature was now 98.4 degrees. The patient denied tampering with the thermometer. In searching for an explanation of the unaccountable rise it was discovered that if a thermometer was inserted into the hot air register it would rise to 101 degrees in a very few seconds. Although the patient had had the time and the opportunity it cannot, of course, be proved that she had done this. The newly developed ulcer was enclosed in a sealed dressing and was healed in nine days. The patient was again told that she would be discharged the next day.

For the second time the announcement of her coming discharge from the hospital was followed by the appearance of new lesions during the night. The next morning there was found on the site of the old lesion an elongated, superficial excoriation with red, smooth base, secreting much serum, and with jagged, torn edges which suggested mechanical trauma. According to the patient, the lesion had appeared suddenly during the night, without subjective symptoms and, so far as she knew, without cause. Under a sealed dressing the wound had about healed when the patient contracted diphtheria, and was transferred to the contagious hospital, December 25, 1904.

She was not seen again until March 4, 1905, when she returned to the Surgical Out-Patient Department with an irregular ulcer on the inner side of the right index finger,

one-half inch in diameter and covered with a blackish crust. This, she said, had developed the day before within five or ten minutes. March 18, 1905, the remaining phalanx was amputated. March 24th, the stitches were removed and she was discharged from the hospital with the wound clean and solid. One week later a black, dry, gangrenous area about one-half inch in diameter developed on the inner side of the amputation scar. (Plate xiii, Fig. 2.) April 13th, the gangrenous area was curetted and two inches of the radial nerve were excised. A recurrence was not prevented, however, and on April 22d she was again admitted to the surgical ward, where the ulcer gradually healed under hot and cold douches and massage. During her stay in the hospital she complained greatly of sleeplessness and loss of appetite. May 9th she was discharged, but returned on May 25, 1905, to the Surgical Out-Patient Department, saying that since her discharge from the ward the black spot had continued to spread. She was readmitted to the hospital and the median nerve was stretched. For two or three days after the operation catheterization was necessary. The operation wound healed readily and on May 31st she was again discharged to the Surgical Out-Patient Department. She continued to complain of the pain in her shoulder. The ulcer also continued to spread until by June 24, 1905, it had exposed the dorsal tendon. After curetting it began to close in slowly until, July 29, 1905, it was finally healed.

During her various stays in the hospital the patient had always complained greatly of the tenderness of the ulcers. It was very noticeable, however, that when not under observation the patient was able to use the hand in a manner which did not bear out her assertion of their great tenderness. Further, if her attention could be diverted while under examination the ulcer could be handled freely without causing any expression of pain.

The patient continued to return from time to time because of pain in the hand and arm. No more ulcers developed on the hand, but, March 27, 1907, she came with a shallow ulcer over the right tendon Achilles, which healed promptly and never recurred.

She was seen for the last time April 29, 1907, when she reported that there had been no more outbreaks. "She complained of pain for the last six months in the lower left side at the time of the menstrual periods and also of occasional diarrhœa and vomiting. Nothing was found on physical examination except a slight leucorrhœa."

CASE 1. *Summary.* Trauma. First manifestation after four or five days at site of wound. Eruption preceded and accompanied by pain radiating from the part. Abrupt appearance of black spot quickly forming slough. Ulcer refused to heal. Spread downwards to bone. No inflammatory thickening or induration. Recurrences higher up at varying intervals pursuing same course as first. Successive amputations of first and second phalanges failed to cure. First lesion round, later ones irregular; once accompanied by swelling and hyperæmia. Healing under closed dressing. Feigned temperature. Twice lesions recurred during the night coincidently with the announcement of her approaching discharge. Amputation of third phalanx and later excision of piece of radial nerve failed to check the recurrences. Was also new lesion after stretching of median nerve. Spontaneous cessation of process after duration of one and one-half years. Eruption limited to hand and forefinger. Slight signs of hysteria. No syringomyelia or arterio-sclerosis. Internal organs normal. Patient not detected. Later, vomiting and diarrhœa with the menses.

CASE 2. Female, 18. The patient was admitted to the Skin Ward of the Massachusetts General Hospital, September 13, 1904.

It was difficult to obtain a good history from the patient, as apparently she alternately resented the questioning and amused herself by making indefinite and contradictory replies. The family history and the previous history were negative. Two years ago the patient was vaccinated on the left upper arm. The inoculation went through the usual cycle and healed. A few weeks later a small red spot formed on the site of the inoculation, which spread gradually and finally

broke down and formed a good-sized ulcer. Under simple treatment this ulcer healed, but has broken down again several times at varying intervals. Two months after vaccination a second ulcer similar to the first appeared in the bend of the elbow. Since then there have been continual recurrences.

The patient was a well-developed and nourished young woman. Nothing abnormal was found in the heart, lungs, kidneys, or other organs. No temperature nor pulse. There were signs of hysteria present. Except on the left upper extremity the skin of the body was normal.

On the outer aspect of the left upper arm was an irregularly circumscribed ulceration about two and one-half inches in diameter. Its edges were healthy and raised very slightly. The outermost half-inch of the ulcer was superficial and the base clean and granulating. The area within this outer zone was deeper, irregularly quadrilateral in shape, with gently sloping edges, and of a bluish-yellow, necrotic hue. On the outer surface of the left elbow was an elongated, superficial ulceration about one-half by two inches in dimension, dark-colored and shiny. There was also a bean-sized crusted lesion just below the larger ulcer on the upper arm. (Plate xiii, Fig. 3.)

The sites of the former lesions were marked by several small scars and by a macular, rather purpuric-looking area on the extensor surface of the upper fourth of the left forearm.

The patient was discharged at her own request October 4, 1904. While in the hospital the ulcer at the bend of the elbow had nearly healed, the large ulcer on the upper arm had closed in somewhat, but the small ulceration on the upper arm, after partially healing, had again broken down and at the time of discharge was as large as at entrance.

When she returned to the O. P. D. October 17, 1904, it was found that the ulcer on the upper arm had grown larger and was connected with a smaller lesion just below it by a narrow, superficial abrasion. The surface of the upper lesion was covered by a dark blood crust, while the skin was livid for a considerable distance around. In the bend of the elbow was an elongated, superficial, dark-colored ulceration, like the upper lesion, surrounded by livid tissue. The ulceration in the bend of the elbow had healed by October 25th, and the

others were apparently closing in. On November 1st, the patient returned with fresh, irregular, jagged, red patches, extending from the ulcers on the upper arm around to the inner surface of the arm, over which the patient complained of tenderness. The scar of the old lesion in the elbow had broken down again. The arm was enclosed in a sealed bandage which was continued until November 26th. Under this bandage the large upper ulcer healed steadily. The small ulcer at first diminished in size, then grew deeper, but finally began to heal. The ulcer at the bend of the elbow at first grew shallower and longer, then filled in and contracted rapidly. All the ulcers promptly became cleaner and healthier-looking. On November 8th, while having the dressing removed, the patient suddenly fainted. Her color remained good. The pupils were dilated. The eyelids fluttered rapidly. There was slight tremor of the arms, most marked on the right. Unconsciousness was not complete. Later on the patient stated that she had had similar attacks before which were always preceded by a "peculiar, bad feeling in her stomach."

From November 26th, when the sealed dressing was omitted, onward the progress was so unsatisfactory that the patient was readmitted to the skin ward on December 9, 1904. At this time it was noted that "on the left arm at the insertion of the deltoid the epidermis is gone over an area 2 x 2 inches in its widest diameters, with a short peninsula of normal skin on its lower, inner side. For about one-half inch inward the lesion is very superficial, nearly level with the surrounding skin, and grayish-pink in color. Within this is a central area of irregular contour which is depressed somewhat below the surface. The lower portion of this central area is of a reddish color, while the upper portion is covered with a brownish-black deposit. The whole lesion is moist. The surrounding skin for a distance varying from one-quarter of an inch to one inch is of a slightly dusky hue. One inch lower down on the outer aspect of the arm is a lesion one-quarter of an inch in diameter whose periphery is slightly elevated and whose centre is covered with a dry, grayish crust. Removal of the crust exposes a smooth surface bathed in a profuse, clear secretion. At the bend of the elbow is a dusky area

one and a half inches wide extending across the arm. In its centre is an elongated ulceration with a concave base, not especially deep, edges not elevated nor indurated. The base is a healthy red, secretes serum abundantly, and bleeds easily."

December 11th, the patient had an hysterical attack, during which she attempted to do herself injury. Her pulse was normal throughout. No temperature.

"On the morning of December 14th, the back of the left hand and the arm up to within two inches of the elbow was discovered to be swollen and slightly erythematous. Three inches below the elbow on the outer surface of the arm the skin was denuded of its outer layers over an irregularly triangular area, one and one-half inches in its widest part. The surface of the excoriation was smooth and red and its edges jagged and irregular. Just below and adjoining this area was a cluster of vesicles both discrete and confluent. When questioned about this new outbreak, the patient at first said that early in the previous evening her left arm began to pain and a black spot the size of the tip of the finger appeared which within an hour and a half had attained the size of a fifty-cent piece. But later she said that the eruption began with vesicles of various sizes. She removed the top from the largest, which left the denuded area described." The upper arm, which had been enclosed in a starch bandage, remained unchanged. Under a closed dressing the ulcers healed very rapidly. On December 21st, the larger upper ulcer was covered with healthy granulations and had diminished to less than one-half its original size, while the smaller ulcer below it had practically healed. December 21st, the patient left the hospital because the starched bandage was replaced.

The girl was not seen again until February 23, 1905, when she returned to the O. P. D. with the ulcer on the upper arm in about the same condition as at the time of her discharge from the hospital, but with the scar of the old ulcer at the bend of the elbow broken down again

On April 7th, the elbow had entirely healed, while the lesion on the upper arm was about one-half smaller. On the forearm

was a dusky-colored patch of two days' duration, in whose centre was a pea-sized circular area of reddish-brown with a central, pin's head-sized blackish point. April 25th the upper lesion had grown more superficial and was covered with a brownish-black crust from beneath which oozed a dark-colored discharge. May 1, 1905, the patient left in anger because asked if she had caused the ulcers. She was not seen again until a few months ago (1907). All the lesions had entirely healed with irregular hypertrophic scars. She reported that there had been no outbreak for over a year.

During the course of her affection the patient was examined several times by the neurologists both in the Out-Patient Department and in the Skin Ward, but, except for hysteria, nothing abnormal was discovered in the nervous system. At one of these visits to the Out-Patient Department an unsuccessful attempt was made to hypnotize the patient. As she disappeared immediately after, the attempt could not be renewed.

SUMMARY. Hysteria. Trauma followed in a few weeks by first eruption on site of wound. Recurrences on site and below it, but never above. New lesions at varying intervals. Lesions superficial. Erythema becoming gangrenous; excoriations; redness, swelling, vesicles and excoriations; superficial unsymmetrical ulcerations with crusts usually dark; livid patches. Healing under closed dressings. Dressing tampered with. Eruption on exposed arm and hand sparing the part protected by bandage. Onset of eruption sudden, generally without preceding subjective symptoms. Course to gangrene rapid, followed by slow healing. Irregularity of form of lesions marked. Duration of process about three and one-half years. Eruption confined to left arm. Spread of eruption very irregular, jumping about from place to place. Patient viewed outbreaks with complacency and was pleased with attention attracted.

CASE 3. Female, 22. This patient was admitted to the Skin Ward of the Massachusetts General Hospital November 13, 1906. It was impossible to obtain a satisfactory history from the patient, but, fortunately, I was able to confirm and

supplement her story by means of letters received from her attending physician and from the different hospitals in which she had been a patient.

Both parents died when she was a child. At nine years of age she was adopted. The cause of the father's death is unknown. In the case of the mother, although one hospital record says that she died of tuberculosis, the patient's attending physician says that the cause is not known.

The patient says of her previous history that she had always been well up to the time of the present affection. On the other hand, a letter states that she was "well until fifteen years old, when she began to have sick spells, apparently of acute indigestion, which sometimes confined her to her bed for two or three weeks." Further, another letter states that in 1904, while in a hospital for the treatment of her skin affection, she had an attack of appendicitis, but was not operated on. Also Dr. Waterman, of the Nerve Department, obtained from the patient evidence of periods of amnesia.

In regard to the present illness, all accounts agree that the starting-point was a burn by steam on the right wrist in January, 1903. The burn was treated with a strong solution of carbolic acid and refused to heal, so that in March she consulted Dr. ——. He writes that at that time "there was an ulcer one inch in diameter covered with a greenish exudate, situated over the base of the ulna on the anterior surface. After four weeks (April) the ulcer healed. In July the scar was reopened by a pin-prick and underwent a course similar to the first, but attended with greater pain, which ascended to the shoulder and neck. The wound showed no inclination to heal. After eight weeks' treatment it was excised." (The patient stated that the wound was excised in November and that prompt healing followed the operation.) "About two weeks later another ulcer occurred about half-way to the elbow, which was also excised. Healing by first intention." December 24, 1903, the patient entered a hospital, whose record follows: "On admission there was an ulcer over the lower end of the ulna, which she says was caused by carbolic acid some months before. Above this in a straight line up the arm were four other ulcers which she said had appeared later and without

known cause. These were dressed with various applications for a time without much result. Then she was given X-ray treatment, under which they improved rapidly. The patient was discharged at her own request at the end of two weeks and before the ulcers were entirely healed."

The physician already quoted takes up the story again at this point. He says that "in January, 1904, four ulcers appeared simultaneously in the bend of the right elbow, similar to the former lesions, and healed slowly. At the same time ulcers appeared on each instep and were excised." (According to the patient's story, new areas appeared on the inner surface of the right elbow and left wrist about February 1st. The failure to heal them with X-ray was followed by their excision. She does not mention the lesions on the instep). "Up to this time the lesions had all been characterized by ulceration, greenish exudate, and slow healing. Now, a new variety of ulceration followed, which was characterized by its band shape, encircling the leg above and below the knee. The skin took on a blanched appearance, sloughed with a white exudate which resembled granulated sugar. In April, 1904, ulcers of the first variety with a greenish exudate appeared on the abdomen, some of which were excised. Other lesions appeared at frequent intervals."

June 3, 1904, the patient entered a second hospital, at which the diagnosis of hereditary syphilis was made. She was given antisyphilitic treatment, under which the lesions improved very rapidly. June 18, 1904, she was discharged.

After nearly a year of freedom from further outbreaks, her physician's letter continues: "In May, 1905, a blister of the right index finger was followed by the appearance of gangrene, which was excised. As there was not tissue enough to cover the wound, it was left to granulate. The granulations appeared healthy, but broke down in a few days. The following necrosis eventually involved the metacarpal bone, which was therefore removed in August, 1905. Skin grafting to close the wound was successful. Since this, ulcers have continued to appear in quick succession in various parts."

Two weeks before entrance to the Massachusetts General Hospital three lesions of one week's duration which had ap-

peared on the upper portion of the right forearm were excised. The patient said of the evolution of the process that the lesions came independently of any trauma and were always preceded by a smarting of the area about to become affected. The skin then turned red, changed to green and finally became dark colored. The onset was always sudden. The patient also stated that an ordinary wound always healed rapidly.

The physical examination made after entrance to the Skin Ward of the Massachusetts General Hospital showed no organic disease of the internal organs or the nervous system. The patient was a quiet, intelligent woman, well developed and rather stout. There was nothing suspicious in her manner, but concerning her affection she was inclined to be reticent, and her answers were contradictory. The skin of the arms and legs and especially of the front and sides of the abdomen was the seat of very numerous scars of all lengths from one inch to one extending from the front of the abdomen down over the side which measured eight inches. The scars all looked healthy, firm, and white. Some were smooth, some were slightly hypertrophic. (Plate xiv, Fig. 4.)

On the right forearm were two incised wounds which were nearly healed. There were also three excoriations, said to be a beginning eruption, lying together, which were superficial, with jagged edges and central brownish crusts. Their bases were inclined upward from the deeper proximal end toward the hand where they became so superficial as to be nearly level with the skin. Their appearance suggested gouging with the finger-nails. On the abdomen also were several lesions of a similar character.

No new eruption developed while the patient was in the hospital, and under simple protective dressings the lesions present at entrance—which were said to be similar to those of previous outbreaks—were entirely healed. November 28, 1906, the patient was discharged well.

During her stay in the hospital the patient was thoroughly examined several times by the physicians from the neurological department. They could detect no present signs of hysteria, although they considered that the history strongly indicated that the patient had had hysterical attacks during the past

two years. Among other things they discovered that there were several short periods about which the patient could remember nothing. No signs of organic disease or disturbances of function of any part of the nervous system were ever found.

SUMMARY. Female, 22. History of hysteria. Memory of certain periods lacking. Preceding trauma. First eruption in the neighborhood. Upward spread. For a time limited to one part, then occurring elsewhere, but always on accessible parts. No relation to nerve distribution. Spread erratic. Eruption bilateral but not symmetrical. Onset sudden. Outbreaks preceded by smarting or pain. First type of eruption redness, becoming greenish, then forming gangrenous ulcer. Lesions round. Second type—band formation—blanching of skin, slough, white granular exudate. Healing slow. Crops at varying intervals. Numerous lesions excised. Wounds always healed kindly. Ulcers healed rapidly under protective treatment. No outbreaks while under observation. Lesions symmetrical. No evidence of organic disease of internal organs or of nervous system.

CASE 4.—T. R., male, 40, married, coachman.

F. H., 16. Father died of old age. Mother and one sister of phthisis. Nine brothers and sisters died of scarlet fever and typhoid.

P. H. Scarlet fever in childhood. Otherwise always has been well. Habits good. Uses neither alcohol nor tobacco. Denies venereal infection.

P. I. In December, 1905, the end of the right index finger was burned by a spark from a stove. The burn refused to heal and remained open. In March, 1906, it became infected. At first local, the infection soon spread and involved the whole finger, the back of the hand and the extensor surface of the forearm nearly to the elbow. These areas became greatly swollen and inflamed but the temperature was not high. The bone of the terminal phalanx became involved and was first scraped and then amputated at the second joint. The stump wound healed, but three weeks later became infected. The process, as before, penetrated deeply and the

index finger was now amputated at the metacarpo-phalangeal joint. After the inflammation in the hand and arm had subsided, the skin on the back of the hand and the outer surface of the forearm was almost entirely replaced by a thick network of scar-like ridges which ran in all directions, here and there enclosing normal skin. The second amputation wound healed in six or seven weeks.

Following the inflammation of the arm, new lesions developed on the hand, at the site of the amputation wound, on the wrist, on the inner surface of the forearm near the elbow, and one on the inner surface of the upper arm just above the elbow. These showed no tendency to heal, and were accompanied by great and constant pain which the patient said was of an intermittent character and radiated up the arm to the shoulder and thence over the adjacent upper chest on the right side. It was so severe that his general condition suffered because it prevented sleep. November 20, 1906, he was taken to a private hospital, an incision made in the right axilla, and the nerve stretched. The incision wound healed readily. Just prior to the operation he was examined by a prominent neurologist who found marked hyperæsthesia of the whole right arm and the right side of the chest from the shoulder to the breast. At the time of the nerve-stretching there was present over the metacarpo-phalangeal joint of the second finger of the right hand an ulcer which had developed soon after the amputation of the finger. On the right wrist was an ulcer about the size of a quarter, and near it two smaller lesions. On the inner surface of the right forearm was a moderately large lesion and on the right upper arm above the elbow was an ulcer nearly two and one-half inches in diameter. These lesions were similar in character. They were round or oval, covered with dark-colored, almost black, crusts of varying thicknesses, whose upper layers were dry and hard, their lower moist and gummy, and beneath which were profusely secreting, rather superficial ulcers. Following the nerve-stretching, the lesions improved and healed considerably, the smaller ones even disappearing. But progress gradually declined as time went on until the ulcers finally reverted to their old sluggish condition. The radiating pain, which had disappeared

after the operation, returned with the decline in the process of healing. About one month previous to his admission to the Massachusetts General Hospital there was a new and more abundant outbreak, chiefly over the right upper arm and shoulder with a few ulcers on the right forearm. According to the history obtained, the lesions were always preceded by a stinging in the part which increased to actual pain. Then there appeared on the affected area a small black spot which slowly increased, attaining in one month about the size of a fifty-cent piece. There was more or less constant, darting pain, worst at night or in cold weather. Within the past few days a few new lesions have appeared on the dorsum of the right foot. The patient denied the use of any irritant applications on the lesions except alcohol. Sleep and appetite have been poor and the general condition has not been good.

The man was admitted to the Skin Ward of the Massachusetts General Hospital, February 26, 1907. T., 99; P., 93; R., 18. "He was well developed, but rather emaciated and anæmic. His manner was quiet, almost taciturn, but watchful. When observed he would become almost immobile, but when alone he often paced the floor, played a tattoo with his fingers, or indulged in other minor actions indicative of a certain restlessness. The tongue was clean; the teeth in fair condition; the mouth and throat negative. There was no glandular enlargement. The heart was normal in position and area. There were no murmurs and the sounds were clear. Action regular. The pulse was regular and of good volume and tension. There was no evidence of any disease of the arteries. The lungs were normal. There was no tenderness or distension of the abdomen, and its organs were normal. The reflexes were present on both sides, but exaggerated on the left. Urine normal.

The examinations by Drs. Putnam and Waterman of the Nerve Department showed "diminished sensation over the entire right side sharply bounded by a line a little to the left of the median line. Over this area there was no recognition of pain. There was also loss of tactile sense. The patient suffers no discomfort from touch on the cornea on the right side nor from insertion of a pin into the right nostril. No

sneezing. Visual reactions not tested. There is evidence of hysteria."

"The eruption was confined to the right arm and hand and to the dorsum of the right foot, twelve or fourteen lesions in all. At the site of the amputation scar was an irregular lesion, measuring one inch by two and one-half, which was covered by a thick, brownish crust composed of uneven masses piled one on top of the other. From beneath it exuded drops of thick creamy pus. Directly above this lesion, on the dorsum of the hand, is a second lesion of a rounder shape about one and one-half inches by two and a quarter. This, too, was covered by a brownish crust of the same formation which characterized the greater number. This crust was thick, elevated above the level of the surrounding skin, and, roughly, flatly conical, the central portion being higher than the peripheral. It was made up of a series of superimposed layers. The oldest and uppermost layers had dried to almost leathery hardness and had become sunken so that in the centre of the crust there had formed a cup-shaped depression about the size of the end of the thumb. About the edge of the cup a narrow rim of crust projected slightly from which the rest sloped away gradually until it reached the level of the skin. A narrow zone of dusky red skin surrounded the whole. From the edge of a lesion just above two narrow, parallel, brownish lines ran downward toward the edge of the hand as if a liquid trickling down had lightly cauterized the skin. (Plate xiv, Fig. 5.) At the junction of the middle and upper thirds of the forearm was a lesion, about one and a half by two inches, similar to the one just described, but of a darker brown. Other lesions were present just below the elbow and on the upper arm and shoulder. In general, the shape and appearance of the crusts suggested somewhat a dark-colored oyster shell, the wider and more prominent end being above and the thinner, narrower end below. The crusts all had a characteristic laminated structure with a central cup-shaped depression as already described. The color varied from a light to an almost blackish brown."

"There were also several lesions which varied enough from this type to warrant further description. In addition to the

lesion on the back of the hand, those on the outer side of the forearm and on the top and front of the shoulder, and the one on the outer aspect of the forearm immediately below the shoulder, had narrow lines extending from the lower edge downward, which suggested the gravitation of an excess of liquid from the main lesion. From the ulcer on the forearm near the elbow there were two of these lines, running downward and outward over the outer side of the forearm, which varied in width from an eighth to a quarter of an inch, contracting and expanding irregularly along their course. The base was dry, in shape concave or bulbous and of a grayish white color. A single, similar grayish colored line ran downward for a short distance from the lesion just below the tip of the shoulder and another line ran from the lesion on the top of the shoulder. The lesion on the front of the shoulder was covered by an almost black hemorrhagic crust. From this a channel ran downward, similar to those just described, except that its color was very dark instead of gray. Immediately below this is a patch which is not ulcerative like the others, but made up of reddish brown areas of irregular and jagged shapes and sizes, with their long axes parallel to that of the arm, which look as if they might have been caused by some trauma passing from below upwards and bruising the skin in its passage. The lesion on the upper arm below the shoulder resembles the others described in its upper portion, but differs in its lower portion in that it becomes more and more superficial as it progresses downwards. The crusting becomes less and less marked, finally disappearing and being replaced by an erythema which streams downward in lines of darker and lighter shades to terminate in ragged projections which are lost in the healthy skin. As stated, a narrow canal runs farther down from the lower edge. The radiating, irregular, streaming effect suggested strongly the stroke of a brush unevenly applied. In several of the lesions the brownish crust is surrounded by a narrow grayish white line. All the lesions were said to be sensitive, but of this there was no evidence if they were touched unawares. When the patient realized they were being handled they suddenly became very tender."

"On the dorsum of the right foot were three sharply defined lesions, one-fourth inch in diameter, covered by black crusts and surrounded by a narrow erythematous zone. These were of two or three days' duration and were the last lesions to develop."

The crusts of the various lesions were too adherent to be removed easily, but by means of corrosive sublimate soaks and poultices they were gradually softened and loosened. In spite of their formidable appearance the process underlying them was found to be quite superficial, with bright red, easily bleeding granulations bathed in serum. Healing progressed satisfactorily under the corrosive dressings until one day the patient was discovered picking at a nearly healed lesion with his finger-nail. He had succeeded in tearing away nearly the entire newly-formed tissue. On other occasions he was seen rubbing the crusts about over the ulcer beneath. In this manner he had caused lesions which had become perfectly dry to secrete profusely. When this secretion dried a new layer had been added to the old crust. Finally, on April 13th, the arm was enclosed in a sealed dressing under which healing progressed so rapidly that by April 30th, all but three of the ulcers were entirely healed and these three were healing. On the day of his discharge the nurse left the patient for a short time after removing the dressing. Upon her return she found that nearly every one of the lesions had been converted into superficial ulcerations. The patient admitted that he had rubbed them.

On April 1st, at 6 P.M., the patient had an attack of twitching of the muscles of the face and spasmodic movements of the arms and legs which simulated poisoning by strychnine. The spasms, which followed upon the slightest noise, lasted for but a few seconds and gradually became less and less frequent. The patient was bathed in a profuse perspiration and appeared to be in pain, but when asked about it replied that he had none. The pulse was rapid and thready. Knee-jerks were normal. No tenderness of muscles anywhere. After receiving considerable amounts of sedatives he became quiet. It was reported that later in the night he vomited a considerable amount of dark material which did not seem to be blood. The

next morning, the temperature, which had risen slightly in the afternoon preceding the attack, had fallen and did not rise again. Nothing abnormal could be discovered on physical examination. The patient complained that he was unable to turn over in bed, but when given very slight help he succeeded. He also complained of a pain in the spine between the shoulders which prevented him from sitting up. Nevertheless, he sat up in a very short time. He continued to complain of pain between the shoulders for some days after. Toward the end of April he complained of inability to extend the fingers of the right hand, and this condition persisted up to the time of his discharge.

Dr. Waterman, who had made an examination of the nervous system shortly after the patient's admission, had followed the case and April 27th reported:

"When asked how he had been getting along during his stay in the hospital, the patient said, with apparent relish: 'Well, really, Doctor, I can't say that I am one bit better than when I came in.' This, in spite of the fact that the lesions on the arm had practically all healed. He says, however, that he is in constant pain, although there are no outward signs of this. The senses of touch and pain are almost absent over the right half of the body, face, and extremities, while the left half is very sensitive to both. Almost complete hemianopsia. The hearing is much diminished in the right ear, a watch-tick being heard at four inches which is heard two feet away on the left side. The right cornea is insensitive to touch and the mucous membrane of the right nostril is insensitive to pin-prick. Knee-jerks are equal and lively. Pupils equal and react normally."

On May 16th, Dr. Waterman made the following report: "The motor disturbance of the right arm is manifested by an almost complete loss of strength for all movements and the fingers are held in a state of contraction while the arm is flexed at the elbow. All movements can be made to some extent, and through encouragement the amount of motion is increased. The reaction to faradism is present in all the muscles."

At no time during the patient's stay in the hospital were

we able to reproduce the lesions by mechanical trauma. Scratches healed readily and vesicles produced by cantharides plaster healed without incident. A crust from one of the latest lesions was submitted to a chemical examination, but the result was negative.

After his discharge from the hospital (May 18th) the patient came to the O. P. D. on June 29th. His appearance was greatly improved and all of the lesions had healed except one area about the size of a cent on the shoulder which was not quite closed over. He said that there was some burning over the sites of the old lesions. Sensation was everywhere normal. Reactions normal.

SUMMARY. Male, 40. Hysteria. Right-sided hysterical hyperæsthesia and anæsthesia. Trauma of end of right forefinger. First manifestation on site of wound. Long-continued succession of lesions in crops. Spread of affection upward. First lesion round ulcer. Supposed infection with swelling and redness of back of hand and forearm, but without marked rise in temperature. Ulcer spread, involving bone. Amputation of terminal phalanx. Reinfection. Amputation at metacarpo-phalangeal joint. New ulcerative lesions higher up—superficial, round, covered with blackish crusts. No tendency to heal. Pain in lesions radiating up arm constant feature. Intervals between outbreaks varied. Stretching of median nerve of only temporary benefit. Followed in three months by eruption of different type scattered over upper arm without relation to nerve distribution. Stinging of part, abrupt appearance of black spot spreading laterally. Lesions no longer round, but oval or spindle-shaped, often with narrow lines projecting downward from lowest portion; some with tails, covered with crusts sunken in centre, leathery, laminated, brownish, greenish, and blackish; serous discharge from beneath many; some with narrow, inflammatory zone surrounding, some without. Ulcerations superficial. Healing tedious. Closed dressing healed. Lesions re-opened by patient by rubbing. No disease of internal organs. No organic disease of nervous system. Duration of affection about eighteen months. No caustics ever discovered, but patient caught moving crusts over underlying

ulcers. Admitted later that he had broken open healed lesions.

These four cases presented in common an eruption occurring in crops at various intervals for long periods, appearing first in the neighborhood of a preceding trauma and with a tendency to upward spread. The eruptions quickly became gangrenous, sometimes with preceding erythema and vesicles, sometimes without one or both. Slow healing was characteristic. In three cases the eruption was limited to one hand or arm, and one, beginning on one arm, involved the body later. The lesions usually appeared at night or when the patient was free from observation. Healing progressed under closed dressing without other treatment. The patients were never detected. Although two patients were discovered rubbing the lesions, it is probable that by this they merely prevented healing and that the original eruption was caused by other means. The eruptions themselves sometimes changed in type in the same patient. The inaccessible parts were exempt from attack. Especially to be noted was the presence, or at least the history, of more or less marked hysteria. No adequate motive for self-mutilation was discovered. Sometimes the eruptions were preceded by subjective symptoms of pain or burning. The lesions resembled those of no known disease.

Continued study led to the conviction that the eruptions were continued, at least, by artificial means even if not artificially begun. In view of the absence of the actual proof of their artificial creation, two questions occurred to me which have led to the following investigations. Is the hypothesis of artificial production without positive proof any more doubtful than any diagnosis, say of pneumonia, without an autopsy? Further, how do the cases of so-called spontaneous origin compare clinically with those of known artificial origin? The analyses of the recorded cases, with a comparison, point by point, of the cases considered spontaneous with the artificially produced, should at least indicate a working hypothesis.

I have used for this analysis ninety cases of either artificial or supposedly spontaneous origin and have excluded from it such as were due to bacteria, arterio-sclerosis, or to an organic

disease of the nervous system. These ninety cases have been divided into two groups: (1) the artificial, which includes those cases produced by self-infliction; and (2) the spontaneous, which includes those supposed to be due to internal causes. In assigning these cases to one group or the other I have tried in every instance to follow the expressed or implied opinion of the reporter. As a result of this classification it is found that forty-nine cases belong in the spontaneous group and forty-one in the artificial.

*Sex:* Forty-three of the forty-nine spontaneous cases occurred in females and six in males. All the artificial cases were in females.

*Hysteria:* I wish to lay especial emphasis upon the fact that the analysis shows that practically every patient in *both* groups had suffered from some form of hysteria. In the abbreviated reports of ten artificial cases and three spontaneous, no mention was made of its presence or absence. Of thirty-one artificial cases, twenty-seven, or eighty-seven per cent., were hysterical and four were said to show no signs of hysteria. Of forty-six spontaneous cases, hysteria was present in forty, or 81.6 per cent. and absent in six cases.

*Age:* The age at which the affection occurred most often was the same in both groups, for ninety per cent. of the patients with artificial eruptions and eighty-six per cent. of the patients with spontaneous eruptions were under thirty.

*Trauma:* A history of traumatism preceding the first manifestation was as frequent in the artificial cases as in the spontaneous, having been obtained in forty-four per cent. of the artificial and in forty-five per cent. of the spontaneous cases.

*"Incubation":* Neither group showed a characteristic "incubation period" or interval between the trauma and the first appearance of the eruption. In both, there were cases in which the eruption followed the injury almost immediately, and others in which the first outbreak was delayed for days or months or even years.

*Site of First Eruption:* In the majority of both artificial and spontaneous cases in which there was preceding trauma, the first eruption made its appearance at or near the site of the injury.

*Onset:* It was characteristic of both groups for the eruption to appear abruptly, to progress to ulceration or gangrene with great rapidity, and then to heal very slowly.

*Eruption:* It could not be determined that either group possessed a characteristic eruption. The commonest lesions in both eruptions were erythema, vesicles, bullæ, ulcers, and gangrene, which occurred in about the same percentage of cases. Papules or nodules occurred more frequently in the spontaneous cases than in the artificial. Most often the eruption began with an erythema upon which vesicles or bullæ quickly developed, followed by ulceration or gangrene. This mode of development was the one most frequently seen in both artificial and spontaneous cases but a great number of varieties of the type were met quite often. It was not unusual for lesions to abort in either the erythematous or vesicular stage. Occasionally gangrene appeared without any preliminary stage or perhaps with only one. It was not uncommon to find in one patient all the various methods represented at the same time in different lesions. Further, there were artificial cases, as well as spontaneous, in which the development changed with the different crops of lesions.

*Shape of Lesions:* Little could be learned about the shape of lesions, as the reports were not only scanty but were also indefinite, not always stating whether the lesion described was a vesicle or an ulcer. Such figures as I could collect showed that the lesions were round in five artificial cases and two spontaneous; oval in four artificial and four spontaneous; linear in twelve artificial and four spontaneous; angular in three artificial and eight spontaneous.

*Inflammatory Zone:* Singer is often quoted to the effect that "in simulated gangrene the surroundings of the ulcerated or gangrenous area must be irritated. It is not credible . . . that a caustic which causes a rather deep destruction should not disturb the immediate neighborhood of the part directly affected. Swelling and hyperæmia are the most common appearances in the neighborhood of artificially cauterized areas." This statement is directly contradicted by the experiments of Gross and Narath, both of whom found that by varying the strength and the duration of the application they

could reproduce at will any lesion from redness to gangrene often without any hyperæmia or redness surrounding and without any suspicious irregularities. In our series only nine artificial cases are stated to have had an inflammatory zone about the lesions, while it was present at some time in twenty spontaneous cases. Wheals or a general swelling of the part occurred only six times in the artificial cases compared to eight times in the spontaneous.

*Crusts:* No conclusion can be drawn from the color of the crusts as the percentage of the occurrence of brown, black, gray, white, yellow, or green crusts was very nearly of the same frequency in both classes. Some writers have advised a test of the reaction of the crust as a means of determining whether a caustic has been used. That the test is not to be relied upon for the diagnosis is well illustrated by the experiences of Stubenrauch and Gross, each of whom found the crusts in his own case alkaline. But whereas this reaction confirmed Stubenrauch in his opinion as to the spontaneous origin of the eruption it was proved that the eruption in Gross's case was produced by hydrochloric acid.

*Crops:* The appearance of the eruption in crops at irregular and varying intervals was equally common to both groups. The outbreaks sometimes followed close upon one another and sometimes were separated by varying intervals of longer or shorter duration. In many instances a series of crops in rapid succession would be followed by a long period of freedom after which would come another period of crops in rapid succession. In still other cases each crop was succeeded by a long free interval.

*Site of Eruption:* In about fifty per cent. of the artificial and fifty-seven per cent. of the spontaneous cases the eruption appeared first upon either a hand or an arm, after which each succeeding eruption usually appeared higher up than the last. When the trunk was reached all semblance of an orderly progression was lost and the later crops appeared in a haphazard fashion on any part of the body. The rarity of the spontaneous eruption upon the parts which were not easily reached was significant when considered in connection with the fact that the parts most easily accessible were

also the very regions most frequently attacked by the artificial eruptions.

*Frequency of Occurrence:* The analysis showed that the eruption appeared upon the back twice in the artificial cases and nine times in the spontaneous; on the genitals, once in the artificial and once in the spontaneous; on the mucous membranes, twice in the artificial, five times in the spontaneous; on the face, thirteen times, thirty-one per cent., in the artificial, nine times, eighteen per cent., in the spontaneous; on the front of the body, twenty-four times, fifty-nine per cent., in the artificial, twenty-seven times, fifty-five per cent., in the spontaneous cases. That is, the eruption involved the arms, the front of the body, and the genitals with nearly equal frequency in the cases of the two groups. The face was attacked more often in the artificial than in the spontaneous cases, and the mucous membranes and some part of the back were attacked more often in the spontaneous cases.

*Limitation of Eruption:* As an ascending neuritis is often given as the cause of a spontaneous eruption it is rather surprising to find that more artificial than spontaneous eruptions were limited to one part—for example, to an arm. Forty-nine per cent. of the artificial cases were limited to a single part, but only twenty-two per cent. of the spontaneous. On the body, however, the conditions were reversed, for, while of thirty-one spontaneous cases which involved the body, fifty-two per cent. were confined to one side, out of twenty-nine artificial cases only forty-one per cent. had such a unilateral distribution. Symmetry was not a marked feature of the bilaterally distributed cases of either class.

*Continuance of Crops:* It has been claimed that the spontaneous cases can be distinguished from the artificial by the fact that the spontaneous eruption continues to appear beneath closed bandages and while the patient is under the strictest observation. The rule is broken so often, however, by both artificial and spontaneous cases alike that the claim has no truth. The same may be also said of the argument that the failure to detect the patient points to the spontaneous nature of the eruption, for a number of cases, which were eventually proved to be of artificial origin, were not detected for months.

In one case, indeed, it was five years before the true nature of the eruption was discovered.

*Microscopic Findings:* The varied interpretations of the microscopic changes by the advocates of the spontaneous theory proves that the pathological changes were not characteristic. One man believed that his findings demonstrated the internal origin of the eruption, while another said that they showed an infection. Still a third referred the changes to endarteritis and thrombosis. Brandweiner, who denies the theory of an artificial origin, says that the changes in the early stages are analogous to herpes zoster and that the late changes are indistinguishable from those of a burn or a caustic. The differences found in the changes, Róna says, are due entirely to the use of different caustics in different concentrations, to variations in the methods and duration of the applications, and to the varying irritability of the different individuals.

If we now consider this detailed analysis and comparison of the cases of artificial and of spontaneous origin as a whole, the similarity of the two groups is so striking in every essential that we may draw the following conclusions.

1. We cannot distinguish clinically between the cases of known artificial origin and those of unknown or so-called spontaneous origin.

2. This clinical similarity justifies us in the belief that the cases of unknown, *i.e.*, spontaneous origin are due to the same causes as the cases of known origin. The burden of proof lies with those who deny this.

3. The hypothesis of an artificial production without positive proof is no more doubtful than any diagnosis, say of pneumonia, without an autopsy.

Up to the present time no single theory of etiology has been presented which can be applied to all, or even to the majority, of the cases of multiple gangrene. The theory that the eruption is caused by vaso-motor or tropho-neurotic changes is obviously incomplete. Some, recognizing its incompleteness, seek a remedy in a presupposition of some sort of disturbance in the central nervous system. Other men assign the cause to an ascending neuritis produced by truama and, to explain

the outbreaks on distant parts, assume that the neuritis, having reached the cord, involves other segments and thence spreads to other nerve trunks. This is, of course, merely an unproved theory. In the absence of atrophy and other signs which usually accompany a long-continued injury to the nerve, the assumption of an ascending neuritis is not justified even in such cases as are limited to a single part. Further, there are men who are reluctant to admit that any human being would voluntarily submit to such pain and disfigurement, and apparently base their conviction of the spontaneous origin of the eruption upon their failure to find the motive or the means of artificial production. Such divergent views must necessarily lead to much discussion. Somewhere there must be a line of evidence leading to the truth. When we examine the comparative clinical analysis previously referred to we find one invariable symptom, *i.e.*, hysteria, the significance of which is receiving greater appreciation just now than ever before. If we follow closely the more recent investigations of the neurologists into the nature of hysteria, we shall find a theory so complete as to explain all the previously discovered half-truths.

It is of great importance that we should realize that hysteria is no longer considered as a *physiological* condition. Professor Janet says that "the *psychological* conception of hysteria has the mastery to-day over the physiological conception." Therefore we cannot accept an explanation of the occurrence of multiple gangrene of the skin which is based upon the physiological conception of hysteria. The analysis has already shown us the almost universal occurrence of hysteria in connection with multiple gangrene of the skin. We know also that the two great symptoms of hysteria are somnambulism and suggestion. If, therefore, we accept the psychological conception of hysteria, a complete and rational theory of multiple gangrene would be that the patient, while in the psychological condition known as somnambulism, has produced the eruption by artificial means in response to suggestion. Only such a theory as this can explain the limitation of these cases to hysterical patients. It reconciles the apparently divergent theories and explains the similarity

of the eruptions in cases of unknown origin to those of known artificial origin. Further, it does away with all need for a motive and with the incredulity which cannot believe self-mutilation possible.

A brief study of somnambulism and suggestion will demonstrate the truth of these statements. Somnambulism may be defined as that hysterical state in which an idea or a feeling takes on an exaggerated growth which the patient is powerless to check. Because of this unchecked growth, outside the control of the will, that one idea acquires such importance that it finally completely dominates the patient. This is known as somnambulism. During this period of the somnambulistic state all functions are suppressed except those directly concerned in the dominating idea. Although the other functions still exist, they are beyond the control of the patient's will. The dominating idea disassociates itself from them and develops outside the patient's consciousness and control. As Professor Janet expresses it, there is a retraction of the field of consciousness. The idea, which in this state of somnambulism assumes such exaggerated growth, may arise from suggestion from without or from within. After a time, the somnambulistic state disappears, gradually or abruptly, but the patient has no memory of the somnambulistic period and often cannot remember the idea which recently dominated his whole personality. It is also characteristic of hysteria that, in the same way in which an idea takes on an exaggerated growth, there may develop beyond the patient's control various sensory disturbances such as anæsthesia, hyperæsthesia, paralysis, etc.

These major symptoms of hysteria may also be accompanied by such minor symptoms as a lack of feeling and of will, with depression and a lowering of the mental level. "The localization of the hysterical accidents on one place or another, or in one function or another, may be caused (1) by suggestion from without, (2) by a process akin to suggestion, but which is not identical with it according to the laws of psychological automatism, *i.e.*, individuals who, having had an accident in certain circumstances and having been cured, always recommence the same accident each time they ex-

perience an emotion, though it has no relation with the first" (Janet).

We have already emphasized the fact that the cases of multiple gangrene of the skin usually occur in hysterical patients. If, therefore, we view their skin affection in the light of this brief résumé of the chief symptoms of hysteria, their etiology is clear and simple. The process may be summarized in this way. A hysterical young woman, at some time or other, either wounds herself or sees a wound in another person. After an interval which may be long or short she enters into the somnambulistic state. The wound acts as a suggestion to her. In her somnambulistic condition she is powerless to prevent that suggestion of a wound from attaining an exaggerated importance. It continues to develop until it dominates her whole personality. She is entirely unable to control either the idea or its power of disassociation. Control of the sensory functions is lost and anæsthesia follows. Finally, she yields to the suggestion of the wound and produces a similar lesion by any means at hand. She suffers no discomfort, as in addition to the somnambulism the part wounded is anæsthetic. She then gradually emerges from the somnambulistic state and views the wound with astonishment. As she has no memory of the somnambulistic period or of the production of the wound, she honestly believes that the wound came of itself. Thereafter, so long as the condition of hysteria remains, any suggestion, even if remote, will reproduce the same conditions and a fresh lesion is made. The recurrences cease only with the cure of hysteria.

If this theory is correct the initial suggestion may arise from a wound, or a tropho-neurotic process, or a neuritis, or from any other cause. The succeeding eruptions, however, are not the result of the initial process nor of the hysteria itself, but of an unconscious yielding to an idea of exaggerated growth which forces the patient to self-mutilation, outside her memory and her will.

In conclusion, let me again quote from Professor Janet: "It is, perhaps, not very serious not to recognize an hysterical accident and not to treat it, but what is always very serious

PLATE XIII—To Illustrate Dr. Harvey P. Towle's Article.

FIG. 1.

FIG. 2.

FIG. 3.

PLATE XIV—To Illustrate Dr. Harvey P. Towle's Article.

FIG. 4.

FIG. 5.

is to mistake an hysterical accident for another one and to treat it for what it is not."

Finally, I wish to express my thanks to the Staff of the Dermatological Department for their aid and encouragement, and to the Staffs of the Surgical and Nerve Departments for their assistance in the completion of the case records, and finally to the physicians who cleared up many obscure points in the patient's history by their letters.

*Discussion*

DR. H. RADCLIFFE-CROCKER, of London, said that while he fully believed that all of these cases were self-inflicted, very able men who had had such cases under observation for long periods of time had expressed the belief that the lesions were not self-produced, although they were perfectly aware of such a possibility and even probability.

PROF. E. GAUCHER, of Paris, said he had listened to Dr. Towle's paper with much pleasure, because not very long ago he was the only one, with Prof. Raymond, to defend the existence of gangræna hysterica. This condition, he thought, must not be stricken from our nosology. Of course, the gangrene was a secondary phenomenon, caused by infection of a slight abrasion of the cuticle, but hysteria prepared the ground on which the gangrene developed. In a healthy person, such a dermic lesion would never be followed by gangrene, but when hysteria had produced ischæmia, then it might develop. Despite the necessity of an initial lesion, hysteria was absolutely an essential factor. This was enough to justify the maintenance of gangræna hysterica as a separate morbid entity.

*Adjournment at 1 p. m*

## Afternoon Session 3 P.M.

Dr. Francis J. Shepherd of Montreal, Vice-President, in the Chair.

# THEME I.—THE ETIOLOGICAL RELATIONSHIP OF ORGANISMS FOUND IN THE SKIN IN EXANTHEMATA

Presented by Prof. W. T. Councilman and Prof. Gary N. Calkins

# ON THE RELATION OF THE BODIES FOUND IN THE SKIN LESION OF VARIOLA AND SCARLET FEVER TO THE ETIOLOGY OF THESE DISEASES

(with lantern-slide demonstrations)

By Prof. W. T. Councilman, of Boston

In the last three decades there has been greater advance made in knowledge of disease than in any previous century. In this period the general nature of the infectious diseases has been made clear; the etiology, the mode of infection, the prevention, and treatment of several of these diseases have been definitely established. New methods of work have been found; more and better material has been provided for observation and experiment, and the large number of workers in all parts of the world has enabled means and methods to be freely utilized. In no domain of science has the value of the experimental method been more fully demonstrated than in medicine for we find that our knowledge of disease stands in direct ratio to the possibility of investigation by the experimental method.

of the disease. The bodies increase rapidly in the lesions and the lesion seems to increase in extent by continuous infection of adjoining epithelial cells. The forms which occur within the nuclei differ strikingly from those which occur within the cytoplasm. We have not hesitated to regard these bodies as parasites and as the etiological factor in the disease. The two propositions go together, for they are found in no other disease and precede those changes in the cells and tissues which constitute the lesions. In no disease can the relationship between the parasite and the lesion be more definitely shown.

In the course of the investigation of small-pox a more detailed study of vaccinia was undertaken by Dr. Tyzzer. In this disease organisms corresponding to those found in the cytoplasm of the epithelial cells in small-pox are always present, and in the same definite relation to the lesions. They can be much better studied in vaccinia, for the material is experimental and not only can stages be more easily procured but better preservation of material is possible. The inoculations can be made in the cornea, and in no other tissue can such perfect cell studies be made. Dr. Tyzzer has found that the organism appears in the epithelial cells without any change either in nucleus or protoplasm. First as a small body not more than a mikron in diameter, rather dense and refractive, showing no structure and without definite staining reaction. Briefly stated, the bodies increase in size; nuclear material becomes differentiated in them and finally segmentation occurs, the body breaking up into a number of bodies of the same character as those originally present. That these bodies and the structural change in them are not due to the action of hardening agents is shown by ultra-violet photographs of the living cells containing them. By these photographs all the details of structure are more evident than after hardening and staining. In the hardened specimens the bodies seem to lie in a vacuole in the cell which is probably due to contraction produced by fixatives, for in the ultra-violet photograph no such vacuole is apparent.

If material from a small-pox lesion in man be inoculated on an epithelial surface of a calf or rabbit, a lesion which

anatomically resembles the parent lesion, the pock, is produced. Its appearance is accompanied by swelling of the nearest lymph nodes, fever, and constitutional disturbance. After the process has subsided there is immunity to further inoculation. The material from the lesion transferred to another calf produces a similar result, and after a series of transfers from animal to animal may be returned to man and it develops, not the original disease small-pox, but the incomparably milder disease vaccinia. Many of the strains of vaccine virus now used are known to have been derived from small-pox and probably all strains were originally so derived. Vaccinia differs from small-pox in three striking respects:

1. The period of incubation is shorter, being in man five days. The incubation period of small-pox is twelve days.

2. In vaccinia there is no general exanthema. There may be a few vesicles around the site of inoculation but they develop simultaneously with and not after the main lesion and are probably due to local distribution of the virus.

3. For the development of vaccinia it is necessary that the virus reach a susceptible epithelial surface. It may be placed on such a surface or be carried there by the blood after having been injected into the circulation. The disease may be transmitted from individual to individual by immediate or intermediate contact. But the infection is close, there is no evidence of infection at a distance, no evidence of such extension of the infection as is shown in small-pox.

Vaccinia agrees with small-pox in the similarity of the lesion produced by inoculation to the pock and in the fact that both diseases may be produced by the virus of variola.

If material from a small-pox lesion be placed in contact with a susceptible epithelial surface of man or of the monkey, there develops at the site of inoculation a lesion larger but having the general characteristics of the pock, together with constitutional disturbances and an exanthem less abundant but otherwise similar to the exanthem of small-pox; immunity to both vaccinia and small-pox follows the disease. Inoculation of man with small-pox to produce immunity is no longer practised in civilized lands and all that we know of the disease in man is from the older literature. The disease differs from

variola vera in its milder course and shorter period of incubation which is eight instead of twelve days. There seems to be no qualitative difference in the virus of variola inoculata as compared with variola vera; from the mild variola inoculata the true disease is produced, infection taking place as in variola vera. The disease which is produced in monkeys corresponds rather with variola inoculata than with variola vera. Drs. Brinckerhoff and Tyzzer failed in every attempt to produce infection of monkeys otherwise than by inoculation. The inoculation carried from animal to animal produces the same disease with the exanthem and the same period of incubation.

I have said that in the lesions produced by inoculation of the small-pox in the calf and rabbit the parasites in the cytoplasm of the cells were found and only there. In the true small-pox produced in the monkey by inoculation, in addition to the cytoplasmic inclusions the nuclear forms of the parasite are found also. The presence of these nuclear changes is the sharp histological criterion separating vaccinia from small-pox. The nuclear inclusions begin with the appearance of one or several small circular masses in the nucleus. They increase in size and with growth show a greater complexity of structure. The form varies; at times the entire structure appears to be composed of a number of small circles, in the centre or at the side of which small stainable points can be made out. In other cases there is a large central space around which are grouped a great number of small spaces all bearing a central dot. The nucleus enclosing these bodies enlarges, the central chromatin disappears leaving only a faint nuclear rim which finally disappears; the enclosed bodies are set free and they may be found in the central mass of broken down cells mixed with exudation. In the degenerated nuclei there are often found small, refractive, brightly staining points less than 0.5 $\mu$. in diameter.

We have advanced a working hypothesis as an explanation of the striking similarity and dissimilarity between small-pox and vaccinia, and since the appearance of our work we have seen no reason to reject or modify it. The organism found in small-pox has two distinct cycles of development. One cycle is passed within the cytoplasm of the epithelial cells.

It is only possible for this cycle to develop in the calf or rabbit and when established in these animals it remains fixed and constitutes the disease vaccinia. The terminal agent in this cycle of development is only capable of infection by close contact; it is never air borne.

In small-pox, on the other hand, in man and in the inoculated disease in the monkey there is a complete development, and the terminal infectious agent is more infectious and infection extends over a wider area.

Professor Calkins has been associated with us in our work and we have been greatly assisted by his technical skill and by the interpretations which his especial knowledge of the protozoa have enabled him to make.

During the course of the investigation of small-pox, Dr. Mallory undertook the study of the skin lesions of scarlet fever with the idea that bodies of a similar nature to those seen in small-pox and vaccinia might be present there. He found certain specific bodies in and between the epithelial cells which he regarded as protozoa and the etiological factor in the disease. The bodies differ in structure and in staining from those found in small-pox and vaccinia and in some of their phases of development have some similarity to the Negri bodies in rabies. Dr. Mallory describes them as follows:

The bodies usually vary from 2–7 $\mu$. in diameter but occasionally measure 10–12 $\mu$. They may be divided into two sorts, the granular and the radiate. The granular bodies are usually finely but occasionally coarsely meshed and show all variations in size between the limits given. They often contain one or more small but distinct vacuoles. They vary in shape from round to elongated and lobulated forms suggesting amœboid motion. The radiate bodies vary in diameter from 4–6 $\mu$. and are almost invariably radiate in shape. They contain a central round body, around which are grouped on optical section 10–18 narrow segments which in some cases are united but in others are sharply separated laterally from each other. Occasionally some of the segments are larger than the others and in their staining reaction and form closely resemble the smallest granular bodies. Sometimes all the seg-

ments are seen as small free bodies which still surround the central body or seem as though they had been fixed while moving away from it between the cells.

These two kinds of bodies are found in three situations:

Lying in vacuoles in the epithelial cells of the epidermis, to a less extent between these cells, and free in the lymph vessels and spaces of the corium just beneath the epidermis. When within the epithelial cells they usually cause indentation of the nucleus. The bodies are not distributed evenly but usually occur in clumps; moreover the skin from one location may show them chiefly in the lymph spaces of the corium especially in the papillæ, while in that from another situation they may be almost entirely between or in epithelial cells. They are always least numerous where epithelial cells are most abundant.

At the time of the first description of these bodies they had been found in the skin taken from over the chest and abdomen. Duval found them in five acute cases at autopsy. Led by their presence in the lymph vessels and between the epithelial cells of the epidermis to the belief that the bodies might be drawn out with the serum he devised a simple method of producing rapid vesication and was able to obtain the bodies often in large numbers from vesicles produced in the groin in five out of eighteen cases. The serum was practically free from cells, and the bodies could be stained in cover-slip preparations. Duval's description of the bodies and the method of investigation will be found in Virchow's *Arch.*, 1905, vol. 169.

Time will not allow me to enter into the controversy as to the nature of these bodies. Since the publication of the work both on small-pox, vaccinia, and scarlet fever there has been criticism, hasty judgment, and but little investigation. Some work has been done in which undoubted products of degeneration or artefacts resulting from bad methods have been shown not to be living parasites. But we have been perfectly familiar with degeneration products and artefacts but have not considered them because they have no relation to the bodies which we describe. We are perfectly willing to disregard the criticism and hasty judgment and await the period of investigation.

# CYTORYCTES VARIOLÆ; THE ORGANISM OF SMALL-POX

(WITH LANTERN SLIDE DEMONSTRATION)

By Prof. Gary N. Calkins, of New York

One of the chief arguments against the parasitic nature of the cell inclusions in small-pox tissue is the fact that no structure of cellular character can be made out. Misled by the usual expectation of finding a well-defined nucleus and cytoplasm, most investigators have been unable to interpret these inclusions as organisms and have taken the ground that the bodies are degeneration phenomena of a unique type.

It is possible, of course, that such observers are right, but there is also a possibility that they have not exhausted all of the phases which cells and nuclei, especially in the group of protozoa, may show, and it is my privilege to point out in the few minutes at my disposal, some of the features in protozoa upon which is based the contention that the famous Guarnieri bodies conform in structure and development to a well-defined protozoön type.

In the first place, there are organisms among the protozoa in which no formed nucleus is present. Even in the highest types of protozoa, the infusoria, there are species in which the nucleus is never more than a collection of granules (Dileptus sp. for example). In the lowest organisms standing at the opposite end of the line of single-celled creatures, the bacteria, there is likewise no formed nucleus, the place of this important organ of the cell being taken by the distributed granules of chromatin, which in protozoa, we call the chromidium.

In the second place, the protozoa are characterized by a more or less extensive phase of the life cycle in which the

formed nucleus is replaced by such granules of chromatin, or the chromidium, the chromatin arising by secretion or disintegration of the nucleus. It is to this phenomenon in particular that I wish to call your attention, the various phases in the life history of the small-pox organism being interpreted through it.

In the group of protozoa known as the rhizopods the chromidium does not exist at all times, but, in the majority of cases, is formed only at periods preceding sexual reproduction. This is the case, for example, in the great division of the foraminifera, where in forms like Polystomella, the nuclei first divide a number of times, giving rise to multi-nucleated cells. The nuclei then break down and disappear as formed elements, the chromatin being distributed throughout the cell in granular form, thus giving rise to the chromidium by fragmentation. In Arcella and other fresh-water rhizopods, on the other hand, the chromidium granules exude through the membrane of the vegetative nucleus until a mass of irregular chromatin material lies free in the cell, while the vegetative nucleus retains its original form. This latter type of the chromidium is found among the parasitic amœbæ in forms like Chlamydophrys stercorea, Entamœba, etc., and is particularly characteristic of the rhizopods.

In all cases, the chromidium is the most important material of the protozoôn cell, for from its substance the minute nuclei of the conjugating gametes are formed. It may be called the sexual chromatin, while the formed vegetative nucleus in every case degenerates and disappears, playing no part whatsoever in reproduction, at least of sexual reproduction. If no formed nucleus is present in the cell, therefore, we should expect the chromidium at least to be present.

This is precisely the case in the questionable organisms with which we are dealing. It is also the case in the bacteria and in some of the lower flagellated protozoa.

An important and illuminating side light on Cytoryctes variolæ is shed by the facts of Neuroryctes hydrophobiæ, the cause of rabies. The greater part of the life history of this organism is characterized by the absence of a formed nucleus, which appears only in the young stages as a small group of

chromatin granules. As the young organism grows, however, the granules increase in number and spread throughout the cell, the original nucleus being recognizable for a considerable period.

The granules of Neuroryctes are difficult to stain, possibly owing to the mode of life of the parasite in the nerve cells, and the first observations that were made on it led to the belief that it, like Cytoryctes, is a structure without any of the structural characteristics of a living thing. The ordinary method that was first used, showed it as a highly vesiculated body in which no nucleus or other part could be differentiated, and, as the Negri body, its organized nature was discredited. Subsequent research by Negri and his collaborators in Italy, and the splendid work of Dr. Williams in this country, have established the protozoōn nature of the Negri bodies beyond any question. The latter, using a smear method, was able to fix and stain the organisms perfectly, and the vesicles which appeared in the earlier preparations, now appeared in her preparations as chromatin granules. She was able to show that the organisms reproduce by budding and by division; the process taking place in essentially the same way as in Entamœba histolytica, according to Schaudinn's interpretation. In Entamœba, the chromidium is formed prior to the budding process, and the buds are formed as small buttons on the periphery of the cell, each receiving, not a nucleus, but granules of chromatin which formed the chromidium. So with Neuroryctes, Williams found that buds appear as small protuberances on the periphery, each protuberance receiving a portion of the granular chromidium.

No one doubts the fact that Entamœba histolytica is an organism, and an organism closely associated with, if not the cause of one form of dysentery, and the time will come when no one will doubt that Neuroryctes is an amœboid organism, the cause of hydrophobia. The two organisms are somewhat alike in their effects, Entamœba bringing about a characteristic lysis in the wall of the gut, while Neuroryctes causes destruction of nerve and brain cells.

Cytoryctes variolæ is similar to Neuroryctes and Entamœba in its general effect on the tissues, but the tissue

in this case is the skin, the most difficult of all the tissues of the body to work with in the laboratory, because of its resistance to hardening fluids and to the knife. Fixation of the organ, therefore, in the skin cells or in the cornea is no better than were the earliest attempts to fix the Negri body, and, laboring under this technical disadvantage, the life history of this organism is more difficult to work out than any of the others. The complicated life cycle which I described three years ago was worked out on hardened material, and at a time before the work on rhizopods had been done in tracing the significance of the chromidium, and before the structure of the Negri body had been described. The attempt to account for every stage observed in the cells of the small-pox skin, led me to suggest a complicated life history of Cytoryctes which is duplicated in only one group of the protozoa, the Microsporidia, and I therefore placed the organism in the order Microsporidia, class Sporozoa. The later researches on rhizopods, and especially on the parasitic amœbæ, Neuroryctes and Entamœba, have shown that I was in error, and that the structures observed in the different phases of the small-pox organism correspond with different stages of rhizopod cell life.

The earliest of the small-pox forms is a minute cytoplasmic organism which resembles the young Neuroryctes. In very favorable preparations from the cornea a central spot which takes a nuclear stain can be made out. Such a nuclear structure is very difficult to demonstrate, however, and this stage must be passed over as uncertain. There is no uncertainty in regard to the later cytoplasmic stages; and structures appear which are practically duplicates of the minute nucleus formation in free living rhizopods, the nuclei arising, as in the free forms, from the substance of the chromidium. These small nuclei are seen not only in preparations from the skin and cornea, but in fresh tissue in which they have been photographed with the aid of the ultra-violet light.

Inside the nucleus of skin cells during the process of vesicle formation, the organism presents a characteristic appearance. It is usually vesicular, and vesicular in a typical formation, recalling in a striking manner the structure of the

Negri body in preparations made before the present technique was established. In addition to this typical form, other intranuclear bodies are present which give striking evidence of reproductive phases more or less similar to those of the cytoplasmic forms.

At the present time I would interpret the organism of small-pox as a rhizopod in which only one phase of the life history is known, viz., the asexual or vegetative phase. This is characterized by development of the chromidium and formation of small reproductive spores ("gemmules"), which repeat the cytoplasmic cycle. The intra-nuclear forms possibly belong to the sexual cycle, and it is not improbable that, as Councilman early suggested, the intra-nuclear forms may be a different cycle of the organism occurring in variola and not in vaccinia. I would interpret the vesicular forms as either poorly fixed organisms, or as degeneration forms of the organism, the degeneration being produced by the accumulation of toxins found in the breaking down vesicle. In any event the intra-nuclear formsof the organism present a different history from that of the cytoplasmic forms, and this history remains for some one to work out on well-fixed tissue, or better, on the living organism.

*Discussion*

Dr. Walter R. Brinckerhoff, of Honolulu, said he had been fortunate enough to have worked under Dr. Councilman in his studies on variola and vaccinia, and that a great many problems had been opened up by this line of study. It seemed to him that it would be possible to carry out a very important series of experiments dealing with the problem of the modes of the transmission of the disease. It also seemed possible that animal experimentation might lead to the discovery of a rational therapy. Unfortunately, the only animals so far available were monkeys, and in them we could only produce one form of small-pox, *i.e.*, variola inoculata. Hence, to do very effective work in the study of the transmission and of the therapy of the disease it would be necessary to produce true variola, and for that purpose animals nearer to man than those previously experimented on such as orangs or chimpanzees would be needed.

If we could produce variola vera in one of the lower animals,

we would be able to undertake definite work bearing upon the therapy of the disease. The form of the disease which could now be produced in the monkey was never fatal.

There were other problems, Dr. Brinckerhoff said, which bore more directly upon the organism described by Prof. Councilman. One of these was the correlation of the different stages in the development of the organism with the clinical stages of the disease. Also, the differences between the organism in variola and vaccinia could be studied by following the life cycle of this organism in the disease as it was shown in man and in animals. A renewal of the study of small-pox in animals was abundantly justified by the persistence of variola as a public health problem, which in turn was due to the persistence of the non-acceptance of the protective power of vaccination against the disease.

Dr. T. Caspar Gilchrist, of Baltimore, said he felt very diffident in making any statement in connection with this subject, upon which Prof. Councilman had been accepted as an authority, and who was so well known as an acute observer on anything pertaining to pathology. From the photographs, however, which Prof. Councilman had shown, the speaker said he could not refrain from referring to the similarity they bore to some of the forms of cell degeneration found in the epidermis in other skin diseases. Similar looking bodies he had found particularly well demonstrated in a benign growth of the skin which he had reported in the *Johns Hopkins Reports*, vol. i. In carcinoma, also, somewhat similar bodies were found and a number of degenerative epidermal cell bodies had been seen even in herpes zoster. Dr. Councilman's argument that his bodies were parasites was not well established. The weakness of the argument was shown in the fact that the parasitic theory depended on the morphology of the bodies, on an incomplete cycle, on the likeness to some forms of rhizopods, and also upon similar bodies being formed in the cornea of a rabbit after the injection of vaccine. Yet these bodies are only found in the epidermis and nowhere else.

Prof. Councilman said it must be thoroughly understood that the skin was not the only place where one found degeneration. In the course of any active pathologist's work, and in the constant examination of histological specimens, one becomes in time perfectly familiar with the various degenerations. There are many forms of degeneration characterized by the appearance of abnormal substances in cells. In some cases these sub-

stances are the result of changes taking place in the cells, in others they are introduced from without. It would seem impossible for any one familiar with these conditions to confound them with the specific inclusions which have been shown. None of them has a distinct morphology, while in the organism found in small-pox there is an absolutely distinct morphology, as well as all the evidences of growth. The degenerations referred to by Dr. Gilchrist were common and perfectly well known; one simply looked at them and passed them over. They were found in numerous conditions, but none of them suggested the perfectly definite structures shown on the slides. The speaker was confident that it would not be possible to get anything like such a picture from any of the degenerations.

PROF. CALKINS, in closing, said the criticism made by Dr. Gilchrist had already been made about four years ago, and since that time the work had advanced a great deal. No one now, in his opinion, would doubt that small-pox is a germ disease, and if it is due to a germ, it must be in the skin. This organism found in small-pox can be traced back through a regular cycle, and this is an argument that can not be answered, even though it is on a morphological basis.

## THE OPSONIC METHOD IN SKIN DISEASES

BY DR. ARTHUR WHITFIELD, OF LONDON

In attempting to give an account of the method introduced by Wright and Douglas for the diagnosis and treatment of bacterial infections by means of the injection of appropriate vaccines and the estimation of their effects on the blood, the subject naturally falls under two headings, namely, the description of the technique and the results obtainable by the method.

I do not know whether or not I am performing an unnecessary task in describing the technique, but since I am presumably addressing an audience chiefly composed of those who devote their time to the study of skin diseases, and it is practically impossible to keep abreast of the whole of medical literature, I think it wise to say a few introductory words on this part of the subject.

Leishman, while working with Wright, found by mixing measured quantities of fresh blood with suspensions of various micro-organisms, keeping these mixtures for a given time at blood heat, and afterwards making stained films from them, that a variable number of the micro-organisms were ingested by the phagocytes in the blood of different individuals. Wright and Douglas, after somewhat modifying the technique, carried out numerous ingenious researches and made several new discoveries. The method now used is shortly as follows:

1. The serum only of blood is used and is obtained by drawing off small quantities of blood from a needle puncture and allowing it to clot and the serum to be expressed.

2. An emulsion of the bacterium in question is made by mixing it (grinding if necessary in an agate mortar and pestle) with a 1.2% salt solution and centrifugalizing for a short time or allowing it to stand for a long time so that the larger masses may settle out. If the tubercle bacillus be the organism used it is necessary to heat it previously to 100° C. in order to destroy its tendency to agglutinate.

3. Living white corpuscles are prepared by dropping fresh blood into a normal saline solution containing also .5% sodium citrate to prevent clotting, centrifugalizing down the corpuscles, removing the citrate and substituting 1.2% saline, again centrifugalizing, removing the supernatant saline and then collecting and thoroughly mixing the top third of the sediment. This forms an emulsion of red corpuscles with a high percentage of white corpuscles in 1.2% saline.

By those working with the method this is known for convenience as "leucocytic cream" or shortly "cream."

Before actually detailing the method of procedure it may be well to offer a few explanatory remarks. As there is at present no fixed point to work from in estimating the number of bacilli which should be taken up, it is necessary to compare the blood under examination with that of a normal person, or the mixed bloods of many normal persons, often designated a "pool."

The normal standard is arbitrarily fixed at 1.0 and deviations from this are reckoned in decimal fractions on either

side of the normal. The following experiments have been carried out by Wright and Douglas, and others:

1. The leucocytes of a tuberculous patient and the serum of a normal person + tubercle bacilli give a result identical with that obtained when the same serum and emulsion are associated with leucocytes obtained from a normal person.

2. The leucocytes of a normal person and serum of a tuberculous person + bacillary emulsion give the same results as those obtained when tuberculous leucocytes are associated with tuberculous serum and bacillary emulsion. From these experiments is deduced the fact that in variations of phagocytosis the cause of the variation lies with the serum and not with the leucocytes.

3. Heating the serum to 60° C. before use causes it to lose its power of inducing phagocytosis.

4. If, however, the serum be mixed with the bacillary emulsion, allowed to stand for some time at body heat, and the mixture then heated to 60° C. for ten minutes the results obtained with the heated mixture are similar to those obtained with an unheated mixture.

It is therefore agreed that the action of the serum is one upon the bacilli and not the leucocytes, and this action once established is not destroyed by heating to 60° C. Having thus proved the presence in blood serum of a body which is capable of acting on bacilli and rendering them easy of phagocytosis by the leucocytes, Wright and Douglas then named this new body "Opsonin" from *opsonio* "I prepare a feast."

To perform an estimation, amounts of cream and bacillary emulsion are prepared sufficient for several observations, since it is essential that in comparing two or more sera the cream and emulsion shall remain the same. It is also of paramount importance that the sera to be tested shall have been drawn from the body at approximately the same time and kept under the same conditions, since changes take place in the sera after being withdrawn from the body, these changes being first a rise and then a fall in the opsonic power.

Having the sera, the cream, and the bacillary emulsion in readiness, a moderately fine pipette is fitted with a rubber teat, a number marked on the thick part and a small mark

made on the capillary portion about an inch from the end. Cream is drawn up to the mark on the tube, the point is then removed from the vessel containing the cream and the column allowed to slide about a quarter of an inch up the tube, which is then wiped. Bacillary emulsion is then drawn up in the same way, the volume being separated from that of the cream by a small column of air. Now another column of air is taken and finally a volume of serum. The reason for this order is that the cream being rather thick offers a good deal of resistance to being drawn up and consequently the column remains steady and is easy to adjust, the jerking backwards and forwards of the column being a great source of difficulty to the beginner. Serum is taken last because this is the variable quantity, and the slightest contamination of the other fluids by it might vitiate the whole experiment. Personally I always take two volumes of cream to one of each of the others, as I find I get better films in this way.

In the original method of Wright and Douglas normal saline was used to sustain the corpuscles and bacilli, but from experiments these observers made it was found that a certain amount of "spontaneous" phagocytosis occurred in the absence of all serum, and this was reduced to a minimum by the use of 1.2% saline.

As soon as the three volumes are obtained they are blown out on to a clean slide and thoroughly mixed by alternately sucking up and blowing out, bubbles being avoided. The mixture is then drawn up into the pipette in a single column, the end sealed, and the tube placed in the incubator at blood heat for a quarter of an hour. In practice, as soon as one tube is put in the chamber another is got ready, so as to have a series going. I find I can easily get eight tubes in in a quarter of an hour and have done as many as ten in this time. At the end of the period each tube is taken out, the end broken off, the contents again thoroughly mixed, and films made and stained. For fixing the films saturated perchloride of mercury is used, for staining the tubercle bacillus hot carbol-fuchsin, followed by 2.5% $H_2SO_4$, as recommended by Wright, and an after-stain of borax-methylene blue. For other organisms the blue alone gives good results. Having obtained the

films, one counts the number of bacilli taken up by a definite number of leucocytes (I count forty) in the control and compares this with the number taken up in the samples to be investigated, and thus one obtains the opsonic index.

Having thus described the method I may now pass on to the results obtainable by it. The first question which arises is: Are these figures reliable? Now, full as the method is of apparent sources of error, my mind is quite made up on this point. With a good technique in experienced hands, an error of 5%, or at the outside 10%, may occur. I state this with confidence, because for nearly three years I have had a friend working next door to me in the laboratory, and to save time the first down in the laboratory makes cream and bacillary emulsion for both. We use our own bloods as controls and we have compared notes on so many occasions and found almost invariably an error of less than 5% that I feel sure of my ground. Also, on many occasions when Wright was dealing with a case and I took the samples I have taken two samples and worked one out on my own account to control my own accuracy. Occasionally, it is true, something may go wrong with an estimation, but it can practically always be suspected and the estimation rejected. On the other hand, I do not wish to make out that the technique is acquired in a few minutes, because it is not so, and I have seen with deep regret all kinds of perfectly ludicrous statements published, evidently based on bad technique of the crudest variety.

Next we may inquire in what way the estimation of the opsonic index may be of use to us in practical medicine. There are two ways in which it may be used, namely, as a means of diagnosis, and as an aid to the regulation of dosage in treatment.

In the first place, it has been suggested that the opsonin is the chief defensive body, but I do not think Wright himself has ever strongly asserted this, and in conversation with me he has stated his belief that it is only one of the defensive bodies produced by the host.

It is possible, however, that the opsonic index varies with that of the immunity as a whole and is therefore a true index of the power of resistance of the patient. From several

observations I believe this to be generally the case, but I am positive that it is not invariably so. I have carefully watched a case in which the disease was progressing and in which new foci were appearing while the index as examined twice a week was steadily high. Here I regret to say that I am in opposition to Wright, who believes that the high index associated with infection is never maintained, but is only a phase in the oscillations.

In the examination of the index in a large number of healthy persons Bulloch found that it ranged between .8 and 1.2, but I would point out that these extremes were very rarely met with and that the vast majority of Bulloch's observations fell between .9 and 1.1. On the other hand, if a number of diseased patients be examined it will be found that few lie within the normal limits for any considerable period. Most are found to be low, .8 and under, while a good many are high, 1.3 and over, and I have already stated that Wright believes that the high cases are either dealing satisfactorily with a lesion or are oscillating. Certainly oscillation is a marked symptom suggesting infection in a doubtful case, and it is therefore well to take two or three observations before making a diagnosis or even commencing treatment in a case where the disease is known. From the diagnostic point of view, therefore, we may say that a high, low, or oscillating index is suggestive of infection with the organism in question.

Referring back one moment to the question as to whether the opsonin is the only important body in immunity in those diseases due to a bacillus which is chiefly endotoxic, my friend, Dr. Briscoe, has performed some very interesting experiments. It is well known that heating to 60° C. destroys the opsonins. Dr. Briscoe immunized animals to different bacilli (actually to Friedlander's pneumo-bacillus and to staphylococcus pyogenes) on three occasions, and when their opsonic index was high drew off some of their blood, exposed it to a temperature of 60° C., determined the opsonic index in the heated serum and found it practically zero, and then injected equal parts of the heated serum and bacillary emulsion into animals, using as a control equal parts of the same bacillary emulsion and salt solution. In the case of a very virulent

pneumo-bacillus the control died in ten hours, whereas the animal which received the heated immune serum mixed with the bacilli survived three days, while with less virulent organisms the control animal died and the experimental animal was not ill. This would indicate that there is another body present besides the opsonin, but the opsonic index being high at the same time, it may be that the index is reliable to show the state of immunity of the blood.

The heat test has been used also as an aid to diagnosis since it has been found that the opsonin present after inoculation and in those suffering from the disease is not so entirely destroyed by heat. This appears to me to be quite unreliable, since a patient of mine who had had numerous injections of tuberculin, some of them very recent, fell from .95 to .14 after heating for ten minutes to 56.5° C. Lawson, of Banchory, maintains that a negative phase after the injection of a minute dose of vaccine is actual evidence of infection, and although I have not done much work on the subject, what I have done corroborates this view.

We have therefore for diagnosis three ways of using the opsonic index.

1. Gross variation of the index from the normal, or marked fluctuation.

2. Persistence of the opsonin after heating (positive evidence only).

3. Marked negative phase after inoculation.

I may now pass on to the therapeutic use of the opsonic method in skin disease. The three micro-organisms which commonly affect the skin are (1) the staphylococcus, (2) the streptococcus, (3) the tubercle bacillus, and besides these there are other less commonly found infections such as are met with in some ecthymatous sores.

The streptococcus appears to cause two main classes of disorder, namely, an epidermic infection and a corium infection. The former may be acute (impetigo), or chronic (Sabouraud's chronic streptococcic dermatitis). The acute needs no opsonic treatment, since it is so easily cured without it, and in the chronic the infection is so mixed that it is difficult to estimate the etiological importance of the various organisms.

I am inclined to think, however, that Sabouraud has overestimated the importance of the streptococcus in this disease. The chronic relapsing lymphangitis or deep streptococcal dermatitis would be a very suitable case for inoculation were it not for the difficulty of obtaining the particular organism from the case. And I must here emphasize the fact that in streptococcal infections it is of the highest importance to use the culture derived from the particular case, as a patient may show a high index to one strain of streptococcus and a very low one to his own. For these reasons I shall confine myself to the staphylococcus and the tubercle bacillus. The infections with the staphylococcus may be primary or secondary, and in the latter case may have a very variable importance in the production of the disease.

The primary forms are, of course, the boil or carbuncle and sycosis. Sycosis differs from the others in that the organism is shut off from the body generally by the epithelial barrier of the root sheath, which undoubtedly renders it more difficult of approach by the opsonic method. As regards the treatment of boils I may say that in my hands it has been a complete and brilliant success, and every case whose after-history has reached me has been permanently cured. The largest number of injections given has been eight, and the dose has ranged from 250 to 1000 millions of staphylococci. One or two patients have had a boil after the treatment has been begun, but most have had no more after the first injection.

Sycosis has proved more resistant and although I have never failed to cause immediate improvement, the condition has been apt to relapse, more especially in those cases in which the disease has been set up by nasal discharge and in which there is a great susceptibility to ordinary coryza. I have on more than one occasion combined the inoculation with epilation by means of the X-rays, and I think this is of distinct advantage, but I have seen relapse occur in lip cases after the hair has grown again. Sycosis is much commoner in hospital than in private cases and consequently one is seldom able to keep the patient under treatment until a permanent cure is established.

Of the secondary staphylococcic infections, acne, pustular dermatitis, and septic ulcers are the chief examples.

With the treatment of acne I have been disappointed in some cases. Looking through my notes I find that five cases gave brilliant results, after the failure of many other forms of treatment by eminent specialists. One case improved greatly, then fell away again, owing to general ill-health and dyspepsia, after which he threw up the treatment and was for months afterward treated very vigorously by his family doctor under the guidance of a specialist, and then spent some months in Scotland in the country. His doctor told me, however, that his disease was only very slightly ameliorated, and both he and I thought that he did better under the inoculation than the ordinary treatment. One case always improved at once after each injection, but fell away again at the end of a week and finally gave up the treatment. This patient had a strong family history of diabetes on both sides of her family, and had suffered a good deal from general ill-health, though there were no signs of diabetes present. Three cases, one of them very severe and apparently the ideal case for inoculation, sent me by Dr. Pringle, showed no improvement, although I used vaccines made from their own organisms. One case in which I could never get the organisms to grow freely enough for use did not improve. This patient was a terrible sufferer from menstrual and inter-menstrual pain.

The septic dermatitis cases have all done moderately well and some brilliantly. It appears to depend on the degree in which the staphylococcus is responsible for the cutaneous irritability as well as the pustulation. I have only treated one ulcer of nine years' standing, by means of inoculation on the distal side. This healed after four inoculations, but broke down again after an attack of influenza. The patient was about the whole time and the ulcer was immediately above the ankle.

Turning to tuberculosis I have treated two cases of Bazin's disease and several of lupus vulgaris. In one case of Bazin's disease the inoculation was the only treatment which did good during four years' observation. The index when first

examined was .35, and new nodules were coming out. After inoculation the index was easily kept above 1.0 and all the nodules immediately resolved, although before this neither the patient nor I had ever observed a nodule which did not liquefy and burst. Treatment was continued for about six months and then the patient stopped attending. Three months later she reappeared with new nodules and the index was found to be 1.2. This high index was maintained though nodules kept appearing, and eventually inoculations were tried, but were unavailing. She was taken into the hospital and the index examined twice a week and it was found always high. Not until the last nodule had formed and burst did it fall to .9.

Turning to my cases of lupus vulgaris, I may say that in all cases except one the disease appeared to be arrested, though the natural spread is so slow that it is difficult to say how much is due to the treatment. In the one case in which spread took place the patient, a boy aged ten, was in very poor circumstances and had absolutely no appetite. A great deal of careful general treatment did something to improve his condition, but I was unable to keep his index up with any degree of certainty and eventually he was taken into the hospital and the patch excised. In no case of lupus treated by me have I seen marked improvement unless the case has also been under X-ray or light treatment, yet I have cases which have been carefully opsonized for nearly three years. On the other hand, I have seen a few cases of Wright's in which undoubted improvement, almost to the point of cure, has taken place.

Of course, with his complete staff of workers a difficult case can be opsonized daily, but I venture to think that the results of opsonic treatment alone in lupus are slow and uncertain. Lupus, however, is not well understood, and it may well be that there are additional factors besides the tuberculosis which militate against our success.

## CONCLUSIONS

I may state that I believe that the opsonic method foreshadows an enormous advance in our control over infective

disorders, but that at present there exists a great hiatus in our knowledge which renders the results uncertain in some cases. The following conclusions are, however, based on long and steady work at the method, and are, I hope, stated with reasonable impartiality.

1. The opsonic treatment of boils is uniformly successful and is the only form of treatment for general furunculosis which is in the slightest degree reliable.

2. In sycosis the treatment is a valuable aid, but must be continued for long periods in proportion to the duration of the disease, and it is best combined with X-ray depilation.

3. In acne the treatment is uncertain, in some cases being most brilliant, in others without the slightest avail.

4. In septic dermatitis and ulcers the treatment is of very distinct value as an auxiliary.

5. In Bazin's disease the treatment is somewhat uncertain, but it is sometimes of assistance. In tuberculous ulceration it is of great value.

6. In lupus the treatment alone is too slow and uncertain to be recommended. It is, according to Bulloch, a valuable auxiliary in preventing relapse after Finsen's treatment, and I have found it of value combined with the X-rays.

# BACTERIAL INOCULATION IN THE TREATMENT OF SUPPURATIVE AND TUBERCULOUS DISEASES OF THE SKIN AFTER THE METHOD OF WRIGHT

By Dr. E. M. von Eberts, of Montreal

Towards the close of 1900, Professor Wright of St. Mary's Hospital, London, stimulated by the change observed in the blood of those inoculated with anti-typhoid vaccine, conceived the idea of exploiting bacterial inoculation in the treatment of localized suppurative (staphylococcic) affections of the skin, and in the *Lancet* of March 29, 1902, appeared an account of the clinical results achieved in the treatment of six cases, representing such varied forms of staphylococcic invasion as furunculosis, acne and sycosis; while in May, 1904, from the laboratory of the same investigator, appeared the results obtained in the treatment of a series of eighteen cases of staphylococcic infection by the same method. Since this earlier work, Wright and Douglas, Bulloch, Weinstein, Hektoen, Potter, Webb, and Varney are but a few among many who have exploited this form of therapy with satisfactory results, especially in the more acute forms of staphylococcic skin affections.

This new therapy came to the fore as the end product of many years of experimental work by different investigators. The corner-stone of the opsonic theory may be said to have been laid by Denys and Leclef, who, in 1895, proved the existence in the serum of vaccinated animals of a substance capable of altering bacteria in such a way as to permit of their inception by the phagocytes of the blood, and concluded that vaccinated animals were able to withstand infection, first, by the direct action of the serum, and, secondly, by the leucocytes. The work of these observers was substantiated by

Mennes in 1897, and Leishman in 1902; the latter devising a technique for the quantitative estimation of the phagocytic power of different sera. Then followed the clinical experiments of Wright and Douglas upon "The Rôle of Blood Fluids in Connection with Phagocytosis," in which they conclusively demonstrated the existence in the blood serum of a definite element, which, when brought into contact with bacteria, rendered such more acceptable to the phagocytic leucocytes. To this element was given the name *opsonin*. It was further concluded that the fluctuations in the phagocytic index following inoculation were due to the presence in the serum of a varying amount of opsonin, and that the opsonic content and phagocytic index were practically interchangeable expressions of varying degrees of immunity toward a given infection. The connection between laboratory and clinic was at once established, with the observation that a depressed immunity (negative phase) coincided with exacerbations in the local symptoms, and that heightened immunity was the forerunner and sustainer of improved clinical phenomena; and finally, that inoculation with specific vaccines was generally followed by an ebb, flow and reflow in the immunity curve.

The technique of opsonic determinations has been so widely commented upon, that I purpose to touch only upon the more salient points. For such determinations sera from patients and controls should be collected at the same time each day, and slides prepared within six hours, as after this period has elapsed a gradual decrease in the opsonic element takes place, amounting in twenty-four hours to approximately 50 per cent.

Washed corpuscles should always be prepared from the same individual and immediately before use, as in those which have stood for more than four hours, a gradually increasing number of the polynuclear neutrophiles fail to functionate. This loss of phagocytic function may be postponed within limits by allowing a small portion of the saline to remain after washing, until immediately before use. It is most important at all times in the preparation of washed cells to avoid centrifugalizing beyond the actual time necessary to produce a well-defined "buffy coat," as in prolonged cen-

trifugalization the "blood cream" becomes corrugated on its surface layer, with compaction and distortion of the leucocytes, many of which suffer loss of function.

Bacterial suspensions should be freshly prepared from six- to eight-hour cultures of the homologous organism, employing 0.85 per cent. saline solution as yielding the minimum of spontaneous phagocytosis. In the preparation of tubercle suspensions, 1.5 per cent. saline solution should be used.

A tubular thermostat is indispensable for the accurate incubation of the admixed serum, suspension and washed cells.

In the preparation of bacterial vaccines apart from the fundamental requirement that such shall be closely affiliated to the organism producing the disease which it is desired to combat, there are many details of minor importance which enhance very largely the probabilities of success.

In the first place, it is important that a vaccine should be prepared from the original culture or first transplant. It is sometimes possible to employ the former where care is taken in the transference of material from the lesion to the tube to insure an even distribution of the same over the entire surface of the slant. Early cultures are especially of importance as retaining as far as possible the personal element in the infection.

Experience shows that eighteen-hour cultures are the most suitable for vaccines, as at this time, not only is the growth of the organism mature, but desiccation in the tube has not proceeded to a point where difficulty is encountered in breaking up by simple agitation the smaller bunches of cocci—an important point in connection with standardization.

Devitalization should be effected at the lowest possible temperature, that commonly employed being 60° centigrade for one hour, a period invariably sufficient to prevent growth in control tubes with the exception of an occasional aureus infection. It is possible that fractional devitalization at a lower temperature might yield more active vaccines. The temperature at which devitalization is effected is, next to the source of the organism employed, the most important factor in the determination of the composition of the vaccine.

As I have stated elsewhere, it is my opinion that "stock" vaccines are permissible in the treatment of certain aureus infections, such as furunculosis and impetigo, providing always that the "stock" employed has been prepared from the organism isolated in a similar clinical condition. Of course, where a case fails to yield at once, a personal or autogenous vaccine should be employed for subsequent injections. In the conduct of cases of acne indurata and coccogenous sycosis personal vaccines should in every case be prepared. Failure or only partial success in the handling of such cases has been largely due to the inattention paid in the past to the question of autogenous vaccines.

In the treatment of tuberculous infections of the skin, the question of autogenous vaccines is at present impracticable, but very encouraging results may be obtained with Koch's new tuberculin (T. R.).

Dosages.—Increasing experience shows that the doses originally employed in staphylococcic infections were too large, so that at the present time instead of 500 millions or more being injected at the initial dose, it has been found advisable to start with 100 or 200 millions, or in a tuberculous case $\frac{1}{2000}$ to $\frac{1}{1000}$ m. gm. of T. R., deciding as to the effect and subsequent dosage by the immunity reaction induced in the individual, as interpreted by the opsonic findings. If the negative phase following inoculation is severe or prolonged, the dose should be diminished. Where, on the other hand, the immunizing response is inadequate—that is, where the negative phase is suppressed and the positive phase but slight—the dosage should be increased.

Subsequent inoculations should not be regulated by the antiquated hypothetical "fixed period" of ten days, but should be undertaken with each successive decline or reflow in the immunity on the fifth, seventh, or tenth day as the opsonic findings indicate. In the use of tuberculin it is as well to make each inoculation a separate event, as reinoculation seldom, if ever, in this infection, leads to a cumulation in the direction of a positive phase.

More attention should be paid in future to the site of inoculation. Everyone who is familiar with the local reaction

which sometimes follows the subcutaneous injection of tuberculin, must have been impressed with the fact that such cases showed more pronounced improvement than is generally met with. Such experience coincides with the observations of Wright in connection with the subcutaneous inoculation of typhoid vaccine, where it was found that local reactions were associated with an immunity response very much greater than in those inoculated intravenously, and possibly the subjects of marked constitutional symptoms. The elaboration of protective elements locally at the seat of inoculation is further substantiated by the observation that in horses a greater yield of antitoxins is secured by subcutaneous rather than by intravascular injections. While personally, I have not had the opportunity of deciding upon a method apparently most suitable to the treatment of certain selected cases of lupus or tuberculous ulceration of the skin, I am assured by Professor Wright that he has achieved brilliant results by placing inoculations on the side of the lesion distal to the lymph glands draining the part, disposing the same circle-wise; care being taken to avoid the too frequent use of the same site.

In the conduct of cases of acne indurata, especially those of long standing, where the presence of scar tissue has materially impaired the cutaneous blood supply, I have employed daily applications of hot water stupes for a period of fifteen to twenty minutes, with a view to dilating the vessels and determining immune serum to the part; that is, a serum rich in opsonins.

As before stated, the personal vaccine is an element of importance in the treatment of at least fifty per cent. of these cases.

Dosage and the spacing of inoculations should be regulated, at the start at any rate, by careful opsonic determinations.

From my own experience and from conversation with other workers in this field, I am of the opinion that a judicious selection of cases is not always made, and that the statistics so far published, embrace under the heading of acne indurata numerous affections such as acne rosacea, comedones associated with suppuration and the

acneiform eruption so common upon the chin and forehead during menstruation. These aberrant forms of acne are apparently not benefited to the same extent. In the treatment of true acne indurata, I have yet to meet a case in which marked improvement after the first inoculation was absent. In long-standing cases, the eruption becomes much more discrete; the papules seldom proceeding to suppuration and scarring. Cases which do not yield promptly are those in which the initial index is not found to be greatly, if at all, depressed. In such cases inoculation can only be considered a valuable additional weapon. The above statement develops the opinion that the primary index has a definite bearing upon the prognosis; where it is found to be low, inoculation is almost invariably successful.

Autogenous vaccines should always be prepared in cases of sycosis. Of three cases in my series, two have reported well, while a third has been the subject of relapses from time to time. When a case comes to this point, I think that inoculation should be combined with whatever other measures have been found expedient.

Cases of impetigo yield so readily to local applications that little has been done in the way of immunization. I have had the opportunity of observing the effect of inoculation upon two cases only, where the infection was limited to the beard. Both cases were greatly improved two days after inoculation, and well at the end of one week. One inoculation only was given in each case. A similar result could be obtained by local treatment, so that the advantage is doubtful apart from the general protection conveyed.

We now come to the last of the staphylococcic group—furunculosis—ranging from small acute pustules, through the thimble-sized boil to the palm-wide carbuncle. In the majority of cases of this group, "stock" vaccines are admissible, and indeed, in a large number of cases expedient for primary inoculations; in subsequent inoculations, however, personal vaccines should be employed.

In these acute localized staphylococcic infections, bacterial inoculation yields the most brilliant results. Practically all cases react favorably.

Opportunity to observe the effect of tuberculin in the treatment of lupus has, in my experience, been limited to two cases: one, extensive and long-standing, involving practically the whole of the face, showed improvement at first, but, as advancement was slow, other methods of treatment were resorted to; the second, an acute lesion on the upper lip, healed completely after three months' treatment. Inoculation in the latter case was only resorted to after various local applications had been tried and the patient had spent two months in the country.

The objective and subjective symptoms following inoculation are, to a trained observer, almost as valuable guides as the opsonic findings. Experience teaches one that exacerbations in the local symptoms are the harbinger or accompaniment of a depressed immunity (negative phase). On the other hand, comparative anæmia accompanies the positive phase. This latter phenomenon, no doubt, accounts for the decrease in the subjective symptom of pain, invariably admitted in severe furuncular infections. In old lupus cases, the bleaching of the scar is a very striking feature. Constitutional symptoms are rarely met with and should never develop if the dosage is properly adjusted.

# BACTERIAL INJECTIONS IN THE TREATMENT OF DISEASES OF THE SKIN

By Dr. Jay Frank Schamberg, Dr. Nathaniel Gildersleeve, and Dr. Harlan Shoemaker, of Philadelphia

The past decade has been remarkable for a number of discoveries which have been directly applicable to the treatment of cutaneous diseases. Among these may be mentioned the X-rays, phototherapy, radium, and opsonotherapy. With the advent of new agencies in the treatment of disease there are invariably enthusiasts whose claims are extravagant. The curative virtues of the treatment are exaggerated and not infrequently the newly announced therapy is viewed in the light of a panacea for a variety of ills. On the other hand, we are sure to find a body of men who are conservative to the point of skepticism or incredulity. They refuse to believe until forced to by the cold logic of facts.

The history of medicine has exhibited frequent proof of the desirability of conservatism among its votaries. New treatments have from time to time been loudly heralded as revolutionizing discoveries only to be tried and ultimately consigned to oblivion. On the other hand, great men have set the sign of their disapproval upon new measures which have come to be recognized as true and important advances.

Time is the important factor which ultimately assigns to each new treatment its proper place and value.

It is premature to anticipate the critical discernment of mature experience by attempting at the present time to determine the value or to define the limitations of the new opsonotherapy. It is the duty of those who have had some experience with the new treatment to place their observations on record, so that a proper estimate of its value may be arrived at as early as possible.

Like most therapeutic advances, opsonotherapy has been developed from the cumulative researches of various workers. Pasteur might be said to have laid the foundation stones of this treatment. He was firmly of the opinion that infectious diseases would ultimately be controlled by protective inoculations. The present treatment was made possible by the epoch-making researches of Metchnikoff on phagocytosis. The defensive rôle played by leucocytes against bacterial invasion was championed by him against strong opposition. To Leishman (1902) are we indebted for developing a method of measuring the phagocytic activity of leucocytes. Wright and Douglas, in 1903, after painstaking researches, proved that the leucocytes ingested and destroyed bacteria only under the influence of activating substances in the blood fluids. They furthermore demonstrated that the action of these substances could be influenced by measures within our control.

The bacteria are so modified by the blood fluids as to render them ready prey to the action of the phagocytic leucocytes. These substances were designated "opsonins" from the Greek *opsono*, "I prepare food for." The opsonins are presumed to act by entering into chemical combination with bacteria and so changing them that they are readily ingested and destroyed by the phagocytes.

Through the beautiful technique elaborated by Leishman, Wright, and Douglas, it is now possible to measure with a fair degree of accuracy the patient's defensive power against organisms which are attacking him. The resisting power of the individual, formerly expressed only in vague and indefinite terms, may now be almost mathematically calculated.

The mere presence of pathogenic germs does not produce disease; so long as the defensive machinery of the body is able to overcome the bacterial attack, the corporeal fortress remains intact. When the balance of power is upset by a weakening of the defensive agencies, the germs invade the system, elaborate poisons, and produce disease.

The claim to distinction of the English researches lies not only in the acquired ability to estimate the defensive strength of the body fluids, but to reinforce them by comparatively simple means.

The bactericidal power of the blood against certain specific organisms may be raised by the injection of a proper quantity of a sterilized culture of those bacteria. There is at first a temporary reduction of the resisting power, corresponding to what has been called the "negative phase." The process, Wright says, "takes away temporarily from the patient's power of resistance with a view of his receiving back that power with usury."

There are a number of cutaneous diseases due to the noxious influence of micro-organisms which ordinarily form a part of the normal bacterial flora of the skin. When such organisms as the staphylococcus produce a disease of the skin they do so because the defensive blood elements which commonly safeguard the body are weakened.

It has long been recognized that certain patients exhibit a vulnerability to staphylococcic invasion. These patients will exhibit upon proper examination a weakness of their staphylo-opsonins. In many instances it is possible to increase and strengthen these substances so that the normal balance of resistance is re-established. Heretofore, we were obliged to be content with an effort to kill the bacteria upon the skin, an almost hopeless task, and to raise the patient's resisting power by tonics, foods, and improved hygiene.

Below are appended brief case histories of the patients treated by us. The frequency and dosage of the inoculations were in some cases guided by a study of the opsonic index, and in others by attention to the clinical appearances alone. We are of the opinion that our results were rather better when we were guided by the former.

In the majority of the inoculations autogenous cultures, *i.e.* cultures from the patient's own lesions, were employed. We feel that these give better results than the use of stock bacterial emulsions, although we have seen the latter accomplish decided results.

A description of the technique employed is omitted in order to economize space. In general we followed the method so carefully detailed by Wright.

SYCOSIS VULGARIS

CASE 1. S. R., age twenty-nine, sycosis of five months' duration. Entire bearded region of face and neck covered with scattered follicular pustules. A few pustules on right wrist. Had received varied local treatment consisting of sulphur, mercurial, and ichthyol lotions and ointments, and some X-ray treatment, without any benefit.

Opsonic index to staphylococcus aureus, 0.6.

On April 4, 1907, received one hundred and sixty-five million staphylococcus aureus.

On April 9, 1907, index had risen to 0.8. Injection of two hundred and thirty million aureus.

On April 16, 1907, index further raised to 1.0.

Four days after last injection an indurated mass the size of a goose egg and very painful appeared at site of injection on the back. This looked as if it might suppurate, but gradually disappeared without doing so.

An improvement in the eruption began a few days after the first injection, and progressed rapidly, so that by April 22, 1907, or eighteen days after the first injection, the lesions had entirely disappeared.

It is now over five months since the patient was treated and the face has remained entirely well, not a single new pustule developing. But two injections were given. No other treatment was employed.

SYCOSIS VULGARIS

CASE 2. C. F., age thirty-nine. For two years patient has had boils about neck and jaw, also pustules about hair follicles. At time of inauguration of treatment a number of pustules were present, and on left side of jaw a large indurated linear patch containing pus. On May 17, 1907, received an injection of four hundred million staphylococcus aureus cultured from the patient's lesions. An improvement in the condition of the face began within a week. The improvement continued and in about a month the infiltrated suppurative patch had almost disappeared. A few new pustules developed on neck.

Patient seen August 31, 1907, was vastly improved and practically free of eruption; only a few small dried-up pustules visible.

This patient had pronounced reaction in the back where the injection was given, which terminated in an abscess. This was the only patient in whom such a condition occurred.

The patient is now almost well.

### SYCOSIS VULGARIS

CASE 3. A circumscribed sycosis limited to the upper lip just below the nostrils. Duration eleven years. New pustular lesions develop every few days.

Culture taken on June 3, 1907, and five days later an injection of staphylococcus aureus was given. Pustules began to dry rapidly. Itching which was present has decidedly lessened. The first new pustule developed five weeks ago. Patient was seen on March 31, 1907, and said he had had no pustules in six weeks. The patch is slightly red and scaly.

Only one injection given. No local reaction at site of injection.

### SYCOSIS VULGARIS

CASE 4. H. S., age twenty-three, deaf mute. Very severe sycosis of entire hairy region of mustache and beard on both sides. Nodular infiltrations; eruption markedly red and inflammatory.

On May 28, 1907, injection of four hundred million staphylococcus albus cultured from the lesions. The following day a new pustular outbreak occurred, and for some time afterwards the eruption was worse than before treatment.

On June 17, 1907, forty million mixed aureus and albus injected. No improvement.

July 5, 1907, about eight million aureus was injected.

July 19, 1907, forty million aureus injected.

August 3, 1907, fifty million aureus.

August 10, 1907, one hundred million aureus.

The patient was last seen on September 3, 1907, and now

shows a pronounced improvement. The face is smoother, paler, less infiltrated, and shows but few recent lesions. Treatment will be continued. It would seem that this patient received too large an initial dose, which resulted in a pronounced and prolonged negative phase.

SYCOSIS VULGARIS

CASE 5. S. F., age thirty-two. Circumscribed sycosis of upper lip just below nostrils. Duration five years. New pustules develop every day.

On July 19, 1907, fifty million injection of staphylococcus aureus cultured from lesions was given.

July 23, 1907, no improvement.

August 3, 1907, ten million staphylococcus albus (autogenous) injected.

August 10, 1907, one hundred million albus given.

August 13, 1907. Fissure has healed and patch entirely dry. Patient is now vastly improved and appears to be almost well.

Three injections given.

SYCOSIS VULGARIS

CASE 6. J. S., age twenty-three. Discrete pustules and tubercles in bearded region of right side of neck. Has had outbreaks of pustules on body.

April 27, 1907, two hundred and fifty million staphylococcus aureus (cultured from lesions) injected.

April 29, 1907, pustules show tendency to dry up.

May 3, 1907, lesions had all dried up and the patient appeared to be getting well. Injection of four hundred million aureus.

May 20, 1907, another injection given; four days later a marked relapse occurred.

This patient has received seven injections in the course of twelve weeks, but still continues to have relapses and cannot be said to be much improved.

SYCOSIS VULGARIS

CASE 7. J. M., age twenty-seven. Rebellious sycosis of

lip and chin of four years' duration. A year or more ago the lip was X-rayed and a greater part thereof permanently depilated. Where the hair is intact pustules still appear.

June 11, 1907, injection of fifty million staphylococcus aureus (not autogenous).

June 14, 1907. Lesions have completely dried up.

June 21, 1907. A few new pustules appearing.

June 27, 1907. Patient says pustules appear more sparsely than before injection.

June 28, 1907. About eighty million aureus injected.

July 15, 1907. Severe relapse.

July 19, 1907. Twenty million albus (autogenous) injected.

July 23, 1907. No new lesions since last injection. Subsequently a relapse.

August 6, 1907. Twenty million albus (autogenous) injected.

This patient has had four bacterial injections. Temporary improvement has occurred, but the result thus far cannot be said to be satisfactory.

### SYCOSIS VULGARIS

CASE 8. M. F., age forty, son of Case 3. Scattered patches of sycosis on upper lip. Pustules small and patches inclined to be dry and scaly.

July 5, 1907. Fifty million staphylococcus albus (not autogenous) injected. No improvement.

July 19, 1907. One hundred million of a pool of albus and aureus injected. No improvement.

### SYCOSIS VULGARIS

CASE 9. S. B., age twenty-two. Duration of disease two years. In the beard of right side of face a reddened patch five inches by two inches, studded with numerous papules and pustules. Has been under treatment constantly without avail. New outbreaks of pustules every few days.

June 20, 1907. Four million staphylococcus albus (autogenous) injected.

June 29, 1907. Face looks decidedly better.

July 5, 1907. Forty million albus given.

July 19, 1907. One hundred million of a pool of albus and aureus injected.

August 20, 1907. One hundred million (autogenous) aureus given.

Patient shows improvement, but the result is thus far not as gratifying as in some of the other cases.

### CHRONIC FURUNCULOSIS

CASE 10. M. T., age forty; disease has lasted many years; entire trunk is covered with scars. At the present time several large abscesses on the buttocks and smaller ones on abdomen. Staphylococcus albus found in culture. Opsonic index 0.5.

June 19, 1907. Injection of twenty million albus. Within a few days patient showed improvement.

Patient also had a suppurating paronychia on thumb. Paroncyhia on thumb almost entirely well.

June 26, 1907. Several small new abscesses around the waist line.

June 28, 1907. Forty million albus injected.

July 5, 1907. Forty million albus given.

July 19, 1907. One hundred million pool of albus and aureus injected.

August 3, 1907. Ten million aureus injected.

August 5, 1907. Three new furuncles present.

August 10, 1907. One hundred million aureus injected.

August 13, 1907. Deeper lesions healing. Few superficial pustules still exist.

August 20, 1907. No new lesions. Patient decidedly improved.

Patient has received six injections and is now almost if not entirely well. No treatment was used except the evacuation of the pus in the abscesses.

### ACUTE FURUNCULOSIS

CASE 11. Mrs. L. P., age twenty-five, has been suffering from boils for a number of weeks.

On May 14, 1907, an injection of three hundred million aureus was given. Patient did not return to clinic; on inquiry at her residence, it was stated that she had recovered from the condition from which she was suffering.

### CHRONIC FURUNCULOSIS

CASE 12. Dr. T., age thirty-four. Duration of disease two years. Has not been free from boils and carbuncles for more than three to four weeks throughout the entire period mentioned. Recently the furuncles have been numerous.

On July 17, 1907, thirty million staphylococcus aureus was injected. No new lesions developed until July 26, 1907, when three small furuncles appeared.

On August 2, 1907, twenty-five million mixed albus and aureus was injected.

On August 28, 1907, fifty million aureus was injected.

August 31, 1907. Three hundred million aureus and albus injected.

The patient, who is a physician, states that he is certainly improved since the treatment was instituted. He has had four injections and is still under treatment.

### SEVERE ACNE INDURATA ET PUSTULOSA

CASE 13. N. J., age seventeen; duration of disease one year. Extremely severe indurated and pustular acne covering the entire face.

Opsonic index to the staphylococcus aureus 0.5.

April 27, 1907. Three hundred million aureus injected. Within a few days a perceptible improvement in the face was noted.

May 1, 1907. Index 0.813.

May 3, 1907. Four hundred million aureus injected. Patient very much improved.

Five additional injections have been since given. The patient has, therefore, received in all, seven injections. The face is greatly improved, the deeper lesions having in large part disappeared. Superficial pustules still appear at times.

No local or general treatment used. Patient still under treatment.

ACNE INDURATA ET PUSTULOSA

CASE 14. B. A., female, age twenty-two; duration of disease two years. Numerous indurated and pustular lesions over face. This patient has received, up to the present time, six injections of the staphylococcus. There has not been much improvement.

ACNE

CASE 15. M. S., female, age twenty; duration of disease seven years. Small papulo-pustular lesions over face. Marked tendency to flushing, which is increased by excitement of any kind.

This patient has received four bacterial injections. No perceptible improvement in the acne lesions has taken place, but a most remarkable disappearance of the redness is noted. The patient's face was always flushed at her appearance at the clinic, but is now comparatively pale. She states that the flushing has practically ceased.

ACNE PAPULOSA

CASE 16. J. M., age twenty-three; duration of disease eleven years. Small papulo-pustules scattered over face and neck.

Three injections have been given; only a slight improvement is noted.

ACNE

CASE 17. T. S., female, age sixteen; duration of disease five months. Profuse eruption of very small papules and pustules over cheeks, chin, and nose.

Three injections have been given without any marked improvement.

ACNE AND SEBACEOUS ABSCESSES

CASE 18. Mrs. J. F., age thirty; duration of disease

twelve years. Numerous sebaceous abscesses of the face varying in size from a pea to a hickory nut. Also small pustular lesions.

Patient has had all sorts of treatment, including a course of X-ray exposures. Staphylococcus aureus found in culture.

This patient received four injections of the albus and aureus within a period of two months. She is vastly improved, and is now free from all deep lesions.

### ACNE AND SEBACEOUS ABSCESSES

CASE 19. J. H., male, age nineteen; duration of disease eight months. Large infiltrated scars beneath which suppuration still takes place.

One injection of four hundred million albus and aureus has produced a pronounced improvement in the patient's condition.

### ECZEMA VESICULOSUM COMPLICATED BY A FEW FURUNCLES AND PUSTULES

CASE 20. B. F., female, age fifty-two; duration several months. The patient has had an erythematous eczema upon the trunk, with a pronounced vesicular eruption covering the patient's face and arms. Intense itching. Patient later developed three or four furuncular lesions on the buttock and hands; the thumb also became infected and suppurated.

On May 22, 1907, injection of four hundred million staphylococci was given. This was followed by an immediate disappearance of the pustules, furuncles, and suppuration of finger. One week later a second injection of staphylococcus aureus was given. A paste containing phenol and calomel had been previously used upon the area affected with eczema and was continued. The patient experienced a marked improvement in her general health.

The eczema responded rapidly to treatment, and in four weeks had disappeared. A slight ephemeral relapse, characterized by a mild papular rash, appeared on September 3, 1907.

In this patient the bacterial injections certainly effected a cessation of the pyogenic complications. The eczema

appeared to be decidedly more amenable to treatment after these injections than before.

### PSORIASIS

CASE 21. M. M., male, age thirty-one; duration of disease one year. A considerable number of coin-sized, scaly patches scattered over trunk. Scales were cultured from the surface of the lesions and the staphylococcus albus obtained.

On June 9, 1907, five hundred million albus was injected. Three days later there was an unquestioned tendency of the patches to clear in the centre. This central involution continued until it affected all of the patches present. No other treatment was employed.

On June 18, 1907, ten million albus was injected.

July 18, 1907. One hundred million aureus injected. No improvement appeared to continue beyond the central clearing of the patches.

### LUPUS ERYTHEMATOSUS

CASE 22. M. W., female, colored, age fifty-one; duration of disease eleven years. Extensive involvement of the right side of the face with several small outlying patches. In some areas, great infiltration. Normal pigment lost over greater portion of the affected area. Skin looks quite whitish. The condition appears to have been aggravated by a course of X-ray treatment previously given.

This patient has received five injections of tuberculin T. R. (P. D. & Co.) From $\frac{1}{1800}$ to $\frac{1}{1000}$ milligram was injected each time. Some of the injections were followed by slight febrile reaction. The whitened area has taken on a distinctly more reddish appearance, and there is an increased tendency of the islets of normal pigment to increase in size. The patient claims to have less itching and soreness in the affected area.

### GENERAL AND LOCAL REACTION

Within a few hours after bacterial inoculation, it is common for the patient to experience an elevation of temperature of

several degrees, accompanied by malaise. The disturbance seldom lasts longer than twelve to twenty-four hours. The larger the dose given, the more pronounced is the constitutional disturbance.

Many patients complain of some soreness at the site of puncture for a few days following the injection. Occasionally a circumscribed infiltration develops. In two of our twenty-two cases a decided local reaction occurred. In one there was a large reddened inflammatory swelling which looked as if it would suppurate, but which ultimately underwent resorption. In the other case, a large abscess developed from which four ounces of pus were evacuated. In both of the cases, the sycosis from which the patients were suffering responded rapidly to the inoculation. In the first case, a complete cure resulted from two injections, and in the second a steady improvement amounting almost to a cure from the one injection. These observations are of interest in connection with the statement of Wright, that the greater the local reaction, the greater the amount of bacteriotropic substances formed. He remarks that in typhoid inoculations, those cases do best in which there is considerable local reaction.

The opsonic index taken within the first twenty-four or forty-eight hours following the inoculation will usually be found to be lower than before. With this decline, there is often an aggravation of the cutaneous lesions. This "negative phase" may disappear within forty to seventy-two hours, or may last several days longer. It is followed by a rise in the index and an improvement in the clinical symptoms; this is the positive phase.

The *dose* of the bacterial emulsion to be employed varies according to the organism used, the degree of depression of the index, the type of infection, and the age and condition of the patient. It must not be forgotten that there are individual idiosyncrasies in relation to this remedy, as well as to other therapeutic agents. In many cases the dose employed is too large. We attribute some of our failures or tardy results to an excessive initial dose. It is best to start with a small dose and increase. No absolute rule can be laid down at the present time regarding the dosage.

In general, it may be said that smaller doses should be used: when the index is very low than when moderately depressed; in acute than in chronic diseases; in children and debilitated individuals than in adults and in the more robust.

In regard to dosage, Wright says: "The proper principle of dosage in any series of inoculation is never to advance to a large dose until it has been ascertained that the dose which is being employed is too small to evoke an adequate immunizing response. A dose of vaccine may be adjudged too small as soon as it has been ascertained that its inoculation is not followed by a negative phase and that the positive phase is not well marked, and is only of very short duration."

### SUMMARY OF RESULTS

Twenty-two cases in all were treated by bacterial injections. Of these, nine were cases of sycosis vulgaris, three furunculosis, five acne, two acne with sebaceous abscesses, one eczema, one psoriasis, and one lupus erythematosus.

It would be perhaps misleading to classify the results in a statistical manner. Some of the patients have been under treatment only a short time, and are continuing to make progressive improvement. It is also possible that cases now regarded as cured, or greatly improved, may subsequently develop relapses. The following table, however, will give some idea of the results achieved.

#### SYCOSIS VULGARIS

| Cases | Results |
|---|---|
| 1 | Entirely cured. |
| 2 | Not improved. |
| 1 | Greatly improved. |
| 2 | Slightly improved. |
| 3 | Almost well. |

#### FURUNCULOSIS

| | |
|---|---|
| 1 | Cured. |
| 1 | Almost cured. |
| 1 | Improved. |

ACNE

2 Improved.
2 Not improved
1 Flushing relieved.

ACNE WITH SEBACEOUS ABSCESSES

2 Decidedly improved.

ECZEMA WITH PYOGENIC LESIONS

1 Pyogenic lesions cured and eczema rendered amenable to treatment.

PSORIASIS

1 Temporarily improved.

LUPUS ERYTHEMATOSUS

1 Result not yet interpreted.

Considering the fact that the majority of these cases were rebellious, of long standing, and had resisted approved treatments of all kinds, the results must certainly be regarded as encouraging. It is impossible at the present time to explain why one case of *sycosis* should be cured by one or two inoculations, and another case resist the influence of seven injections. Future experience with this agency may shed light upon the variations in results. No other treatment, save possibly the use of the X-rays, has given in our hands and in the hands of others, as good results in obstinate sycosis, as opsonotherapy. These cases can be cured by the X-rays, but it is often necessary to bring about a permanent atrophy of the hair follicles leading to more or less disfigurement.

In *acne*, some workers allege to have obtained favorable results in a large proportion of cases. Our results thus far are very indefinite. It is rather surprising that the use of staphylococcus injections should be curative in a disease which is obviously not primarily caused by this organism. Of course, it is quite possible that the secondary pustulation may be prevented by the inoculation of a culture of the staphylococcus. It would seem more rational to employ in this disease the staphylococcus in conjunction with the microbacillus, which is regarded by some as an important etiologic element in the causation of this affection.

In *furunculosis* the results appear to have been more constantly favorable than in any other disease. Heretofore, the treatment of this obstinate and distressing condition has been limited to the use of empiric remedies, nearly all of which have failed, when given adequate and extensive trial. The raising of the patient's defensive power against the invasion of the staphylococcus would appear to be the only scientific treatment of this disease.

It is a pure experiment to use opsonotherapy in *eczema*. Nevertheless, secondary pustulation, which is in all probability a condition apart from eczema proper, is so common that it would not seem unreasonable to expect an improvement of the eczema from the use of an agent capable of restricting suppuration. It is also possible that toxins absorbed from pustular foci in eczema may so influence the individual as to lower his resisting power, and thus make the eczema more rebellious to treatment.

*Psoriasis* could hardly be expected to improve under opsonotherapy without the establishing of the disease as a microbic disorder, and the discovery of the parasitic cause. In the case reported by us, the facts alone are presented without any deductions.

If *lupus erythematosus* is, as many assert, due to the toxins of the tubercle bacillus, it would hardly be proper to inject such a toxin with a view to bringing about a favorable result. The case reported is still under treatment, and does not admit at the present time of any definite statements as to the result produced. It must, of course, be recognized that the treatment here is purely experimental.

In practically all of the foregoing cases, sole reliance was placed upon the serum treatment, no local applications or general treatment having been given, except later in the rebellious and unsuccessful cases. Such a course is necessary in order to prevent an obscuration of the value of the treatment. When the status of opsonotherapy is once established, it will neither be necessary nor desirable to rely exclusively upon bacterial injections, but to employ them, if found valuable in conjunction with other approved methods of treatment. Wright has called attention to the fact that the results are

PLATE XV—To Illustrate Dr. Schamberg, Dr. Gildersleeve, and Dr. Shoemaker's Article.

FIG. 1.—Rebellious Sycosis Vulgaris of five months' duration, resisting all of the usual methods of treatment.

PLATE XVI—To Illustrate Dr. Schamberg, Dr. Gildersleeve, and Dr. Shoemaker's Article.

FIG. 2.—Patient cured after two injections of sterilized staphylococcic emulsion. Photograph represents condition two weeks after first photograph. No other treatment used. No relapse in six months.

better when some agent which produces an increased vascularity of the affected area is used in conjunction with opsonotherapy.

By this means an opsonin-laden lymph or blood supply is conveyed to the affected area. He counsels such measures as radiotherapy, Bier's method of passive hyperemia, and phototherapy.

Many physicians who have read the published reports of cases treated with bacterial inoculations hesitate to accord recognition to opsonotherapy, because many of the cases subjected to this treatment are merely improved and not cured. A number of valuable drugs and therapeutic agents now in general use would likewise fail of recognition if subjected to this standard of criticism.

In order that opsonotherapy should receive an established place in the treatment of disease, it is not necessary to demonstrate that it will alone and without assistance cure the disease for which it is used, but merely that it will accomplish the result aimed at better than previously known therapeutic agents.

### FURTHER POSSIBLE USES OF OPSONOTHERAPY IN DERMATOLOGY

While this method of treatment has heretofore been limited to lupus vulgaris and circumscribed pyogenic affections of the skin, it is not impossible that it may be found of value in the treatment of other cutaneous diseases that result from parasitic infection. Thus blastomycosis, ringworm, favus, and actinomycosis are affections in which this method of treatment should be given a trial.

Wright has published cures of long standing cases of furunculosis and sycosis with his opsonic treatment. He likewise records some of his failures.

Varney, of Detroit (*Jour. A. M. A.*, 1907), used opsonotherapy in twenty-five dermatological cases. Most of these were cases of acne, and the vast majority are said to have been cured by this treatment alone. Varney says he has never obtained nor seen such rapid improvement with other methods of treatment as that occurring within the first forty-eight hours after the first inoculation in selected cases of acne.

He reports five cases of furunculosis all of which were cured by bacterial injection. Also two cases of sycosis vulgaris, one of which was cured.

Turton and Parker (London *Lancet*, Oct. 27, 1906, pages 1130–1136), record thirty-four cases, in which opsonotherapy was used with excellent results in thirty. Most of the cases were tuberculosis. Among the cutaneous affections were three cases of acne, one of sycosis, and one of staphylococcic granuloma.

French (*Brit. Med. Jour.*, February 2, 1907, page 256), reports an infant suffering from seventy-five abscesses. The case seemed hopeless, but was rapidly cured by staphylococcic injections. He also reports the improvement of two severe cases of acne in medical students.

Thorne (*Brit. Med. Jour.*, 1907, page 436), reports a rebellious case of furunculosis of three years' duration, cured by six staphylococcic injections.

Ohlmacher (*Jour. Amer. Med. Assn.*, February 16, 1907, page 571), publishes records of two severe cases of acne, greatly improved by opsonotherapy, and notes the disappearance of the associated oily seborrhœa. He also reports a chronic furunculosis in a child two years old, cured by this treatment.

McClintock (*Jour. Amer. Med. Assn.*, 1907, page 640), in discussing Ohlmacher's paper, said he had treated by opsonotherapy eighteen cases of cutaneous pus affection, ten of which had been cured.

*Discussion*

Dr. A. Ravogli, of Cincinnati, said he had been using the bacterial vaccines for several months past in a case of dermatitis herpetiformis of the Duhring type, which was exceedingly rebellious and in which no culture could be obtained.

In a case of sycosis of five years' standing, in which the face was covered with crusts and abscesses, no improvement followed the use of various salves, nor did the X-rays nor the Finsen rays produce any permanent benefit. He then resorted to an injection of staphylococcus pyogenes albus, of one hundred and fifty millions of bacteria, per each injection, and after about two hours a reaction was obtained with a distinct temperature elevation. On the fol-

lowing day the tension of the lesions on the face had lessened, the pustules gradually began drying up, and eight days later the patient received a second injection. Now he visited the hospital occasionally to receive an injection, and his condition was very satisfactory. The speaker said he could confirm what had been claimed for the opsonic method of treatment in sycosis, and his personal experience with it had been very encouraging. With the gonococcic vaccine he had also obtained excellent results, and he recalled the case of a man with a gonorrhœal arthritis of the knee who had been treated with aspirin and salicylate of sodium without result. The pain was so severe that the patient could not sleep. He was transferred to Dr. Ravogli's service, and was given an injection of gonococcic vaccine of three millions bacteria. After the very first injection he was able to sleep, and after the fifth injection he was so much improved that he left the hospital and returned to his work.

Dr. E. R. Larned, of Detroit, said that there were two questions of the greatest practical importance which had not been touched upon by the essayists, which must be considered in regard to the inoculation with bacterial vaccines in connection with the opsonic index.

First: If it is true, as some claim, that the size and frequency of inoculation must be controlled by the determination of the opsonic index in every case, then only those men who have ample laboratory facilities and are familiar with the somewhat difficult technique, could do the work satisfactorily; but on the other hand, if we could control the size and frequency of the inoculation by the clinical results alone, then those physicians who had access to bacterial vaccines could apply this method of treatment, which would thus come within the reach of all of the general practitioners.

The second question is: if it should be found necessary to use autogenous vaccines in each case, as some claimed, then only those cases could be treated which were in easy reach of the laboratory where these vaccines could be made, or cases must be referred to the laboratory workers, who might be at some distance from the residence of the patient. This fact would place opsonotherapy, in some instances, beyond the reach of the general practitioner; but if, on the other hand, so-called stock vaccines could be used, then all physicians could obtain these vaccines and treat their cases.

Dr. Larned also said that there was a third question growing out of these two, which was, that if it should be found necessary

to use autogenous vaccines, the inoculation of which must be controlled by the opsonic index, then it would be a long time before the problem of opsonotherapy would be solved, because it would limit the treatment of cases with bacterial vaccines to those physicians who are specialists in this line of work and have the necessary laboratory facilities. But if it should be proved upon adequate clinical experimentation, that the statements of some writers were well-founded, that it is sufficient to use polyvalent stock vaccines and regulate their dosage by the clinical findings, then all physicians could make use of the treatment and a vastly greater opportunity for testing Wright's theory would be thus provided.

Dr. Larned suggested that these questions had not yet been answered, that we did not know whether it was absolutely necessary to employ autogenous vaccines or whether stock vaccine would be equally efficient and, until these questions were solved beyond all question, he wished to express the opinion that opsonotherapy with bacterial vaccines must be regarded as an experimental problem of fascinating interest and great possibilities.

Dr. Stopford Taylor, of Liverpool, said that in some of his cases of sycosis and acne he had derived much benefit from vaccines prepared according to Wright, but the majority required X-ray treatment before a cure resulted. Although he had used tuberculin T. R. largely in lupus vulgaris, he could not claim to have effected any improvement without the assistance of other well known methods. The crucial test was the disappearance of the initial nodule, and this he had never seen.

# ERYTHEMA EXUDATIVUM MULTIFORME, ITS PRESENT SIGNIFICANCE—WITH A REPORT OF A CASE OF ERYTHEMA CIRCINATUM BULLOSUM ET HÆMORRHAGICUM FOLLOWING A GUNSHOT WOUND, APPARENTLY DUE TO STREPTOCOCCUS INFECTION AND TERMINATING FATALLY

By Dr. William Thomas Corlett, of Cleveland

The first step towards grouping the objective manifestations of erythema (1) was made by Hebra (2) in 1854. Previous to this time the various forms delineated by Willan (3) in 1808 were accepted and treated of as distinct affections. It is true other observers had paved the way, for in 1835 Rayer (4) cited cases collected by Bonnet in which several varieties of erythema were seen on the same individual.

Hebra observed that the various types of the erythemata, as portrayed by Willan and Plenck (5), often changed from one form to another, and occasionally several types were found co-existing. "In reference to this point," he writes, "experience has taught me that the erythema papulatum, erythema tuberculatum, erythema annulare, erythema iris, erythema gyratum are merely forms of the same disease in different stages, the appearance varying according as the affection is undergoing development, or in a later period of its course, or subsiding. To this malady I shall apply the name of erythema multiforme" (6).

Erythema multiforme as recognized by Hebra was a clearly defined affection running a self-limited course in from two to four weeks, although subject to recurrence.

In 1876 Lewin (7) collected a number of fatal cases of erythema multiforme and maintained that the conception of the

affection then held was too circumscribed, and that certain cases presented the characteristics of an infection. For these he proposed the name erythema exudativum.

Uffelmann (8) also reported cases to substantiate this claim.

The cases thus described were not generally recognized as indubitable instances of erythema multiforme, nor were the conclusions derived therefrom generally accepted. Both Kaposi (9) and Schwimmer (10), while recognizing a bullous form and extending the boundaries of the affection as outlined by Hebra, still insisted that the disease adhered to a definite type, self-limited in its course and terminating in recovery. The former proposed the name erythema polymorphe. This view has largely obtained both in England and America. Thus, Crocker (11), while describing in full the various forms erythema multiforme may assume, does not attribute its occasional fatality to the erythema, but to the diseases with which it is concomitant. The most recent works on dermatology in this country, that of Hyde and Montgomery (1904), Stelwagon (1905), and Pusey (1907), while enlarging the domain and portraying a variety of clinical manifestations under this caption, still maintain a clearly defined boundary and benign character of the disease.

Osler (12), studying erythema multiforme from the viewpoint of general medicine, regards it as a symptom, not always present, of various diseases of the internal viscera.

In France the almost limitless variety of clinical manifestations that erythema multiforme may assume has long been recognized. In 1835 Gibert (13) wrote that erythema may be symptomatic, due to derangements of the internal viscera, and the following year Rayer spoke of arthritic fever and cutaneous hemorrhages in connection with erythema, but drew a sharp distinction between the erythematous and bullous dermatoses.

Besnier and Doyon (14) not only agree with Lewin and Uffelmann that erythema multiforme may pursue a malignant course, but further speak of it as a disease, if disease it may be called, that defies definite classification, an affection of almost infinite variety of clinical symptoms, and under whose

cognomen new forms occur from time to time in the observation of the most experienced clinician.

Since the beginning of the eighteenth century it has been associated with various diseases, notably purpura, rheumatism, urticaria, and pemphigus, until the clinical line of demarcation at times between them is not clear. The cases reported by Mackenzie (15), Osler, Fayrer (16), and Wright (17) go to strengthen the claim of this relationship. On the other hand, it has also occurred in connection with such definite affections as gonorrhœa, syphilis, tuberculosis, pneumonia, enteric fever, leprosy, and Bright's disease; while more recently Galloway and MacLeod (18) have associated it with lupus erythematosus.

While it is disconcerting alike to the student and to the clinical teacher, yet we must admit that the definite limitations of erythema multiforme are at present unknown. Nor can we hope for a clear elucidation until the *fons et origo* of the manifold symptoms which constitute what we call erythema multiforme are better understood.

As in classification, so in etiology and pathology, the great problem relating to erythema multiforme has apparently repeatedly been solved. In 1864, Köbner (19), followed by Auspitz (20), and Schwimmer endeavored to establish it as an angioneurosis due to vasomotor disturbances. In 1876, Lewin and later Molènes-Mahon (21) added primary infection as a cause, to which Vidal and Leloir ascribe certain cases. Ptomaine poisoning or the toxins from faulty metabolism have been assigned an important etiological rôle by Chaisse (22), Legendre (23), and Galloway (24). Cordua (25) and Luzzato (26) found micrococci in the blood, and Haushalter (27) a streptococcus, Leloir (28) both a diplococcus and a streptococcus, while Finger (29) attributed some cases of erythema multiforme to the local effect of bacteria. Later in writing of the cases of erythema nodosum, purpura rheumatica, and epidemic zoster, Kaposi (30) says:

"1. Certain typical cases which occur annually lead us to infer a miasmatic infection or bacterial origin.

"2. Sporadic cases are generally a reflex effect of some anomalous condition of the internal organs, as in amenorrhœa,

dysmenorrhœa, uterine displacements, etc. Such cases are pure angioneuroses.

"3. Some may be due to auto-infection with toxic substances which have entered the blood as the result of internal disease, such as tuberculosis, nephritis associated with inflammation, suppuration and malassimilation" (30).

Besnier and Doyon (31) say: while there may be an infectious element, it is subject to extreme variations and is influenced more by the individual predisposition than by any specific property of the *materies morbi*. It is further evident that erythema multiforme may arise from various causes, but whatever the cause its action is on the vasomotor centres rather than on the skin direct.

In cutaneous hemorrhages which are so frequently associated with the exudative erythema, Howard (32) has recently demonstrated in a number of cases a diplococcus in the blood which somewhat resembles the pneumococcus although differing from this organism in certain details and corresponding to that previously found in hemorrhagic infections by Banti (33), Babès and Oprescu (34), and von Dungern (35).

From the foregoing it is evident that our knowledge of the affection under consideration is in a transitional stage, and any light thrown on it is greatly to be desired. In this connection the following case presents certain striking features:

J. H., male, aged twelve years, with a negative family history, was said to have been a healthy, well developed child at birth. At four months of age he had an abscess in the throat of which the details are unknown; at three years of age he had pneumonia, and at eight diphtheria, in which antitoxin was given. After convalescing from diphtheria, an illness occurred which the mother said was brain fever; she also mentioned what might be malarial fever as occurring about this time.

According to the mother, the child has always been subject to febrile attacks lasting a day or so, during which a slight delirium was often present. Three years ago he visited the Nose and Throat Dispensary at Lakeside Hospital with enlarged tonsils and palpable glands in the neck. Tonsillotomy was advised, but declined. In recent years there have been

frequent attacks of tonsillitis. During the year preceding the illness the child had enjoyed unusually good health.

On May 5, 1906, he was struck behind the left ear with a shot from a Flobert rifle. This was dressed at the Surgical Dispensary of Charity Hospital, and no apparent infection followed. May 12th, seven days later, he returned complaining of pain in the ankles. Examination revealed both ankles swollen, one red with some increased local heat, and a general temperature of 102° F. Examination otherwise negative. The following day he was seen by an outside physician, called on account of an eruption covering a greater part of the body, and said by the physician to be a simple urticaria. On the following day, May 14th, he was seen by Dr. W. H. Merriam, physician at Charity Hospital Dispensary, to whom I am indebted for the notes of the case previous to my examination, who reported him sitting on a chair unable to walk on account of pain in the ankles. At this time the entire body was covered with an erythematous eruption, and about the ankles, which were slightly swollen, was a marked degree of cyanosis. On the neck were a few small bullæ containing a transparent, serous fluid. He was then admitted to Charity Hospital. Temperature on admission was 102° F. Physical examination was negative with the exception of a slight roughening of the systolic tone at the apex of the heart. Two days later, May 16th, the case first came under the observation of the present writer.

The erythema was of a circinate or gyrate variety, with pinkish, apparently elevated margins enclosing a lighter-colored central area, best seen on the trunk and adjacent parts of the extremities. In some places, notably on the buttocks and lower extremities, the erythema assumed a darker hue which pressure with a glass slide did not wholly remove. There were also a few petechiæ and a number of bullæ varying in size from two to six cm. in diameter, most abundant on the neck and upper part of the trunk, although no region of the body was wholly exempt. (Plate xvii.)

The subsequent course of the eruption was as follows: From day to day the erythematous patches gradually became bullous, first containing a translucent, serous fluid, which

soon took on a cloudy, opaque color, and finally became hemorrhagic. As the eruption developed, the pain in the joints subsided. On May 23d, many of the bullæ had become purulent, and on the evening preceding, the temperature, which from the second day in the hospital had remained about 99° F, suddenly rose to 101° F. On this day the bullæ were opened to allow free drainage, and the patient was kept in a mild antiseptic bath. Blood culture was attempted on May 23d, but on attempting to pass the needle into the median basilic vein it was found that the skin was so full of minute vesicles that it would be impossible to obtain a sterile culture. Cultures from both the purulent and hemorrhagic bullæ gave pure streptococcus growths.

On the afternoon of May 24th, the boy developed symptoms of failure and died that night. There was some doubt as to the actual cause of death; it seemed, however, that it might be due to absorption of septic material from the skin lesions, as there was quite a large area of denuded surface.

The post-mortem was made by Dr. J. D. Pilcher, pathologist to Charity Hospital, on the following morning. The result of this examination was entirely negative with two exceptions herewith noted. About the spleen were numerous old fibrous adhesions possibly due to one of the earlier infections, perhaps the pneumonia. The gross appearance of the spleen was not at all that of a septicæmia. The structure was more, rather than less, dense than normal. On opening the stomach, an area near the pylorus was discovered with small hemorrhagic spots. It was suggested that such appearance might have been due to post-mortem changes, but the distinct limitations of the area involved in these spots rendered this untenable. Quite close to the cardiac orifice was an area about three cm. in diameter which showed denudation of the gastric epithelium.

The histological examination was made by Dr. Oscar T. Schultz, of which a synopsis may be given as follows:

The internal organs show nothing further than the changes previously noted, except that attention should be called to the presence of cloudy swellings in the liver and kidneys.

*Skin Lesions.* The epidermis is entirely absent and the surface of the cutis is covered with a thin layer of necrotic material. The connective tissue fibres beneath this layer have a swollen, opaque, rather hyaline appearance. The blood vessels of the cutis are markedly distended, and the accompanying lymphatics are filled with pus cells. Infiltration by inflammatory cells does not occur in the tissue of the cutis. The chief change in the deeper tissue of the skin is limited to the blood vessels and lymphatics. This change is associated with a loss of epidermis and a superficial necrosis of the cutis. The inflammation is of the exudative type, rather than of a proliferative or infiltrative nature. It is the type of inflammation that is often associated with a vascular and lymphatic localization of the streptococcus.

Examination for bacteria shows numerous Gram positive cocci, usually arranged in pairs, in the superficial necrotic zone. Since bacteriological examination of the fluid of the bullæ gave pure cultures of streptococci, one is safe in asserting that the cocci seen in sections are of the same species. Occasional cocci are seen in the deeper tissue spaces. Here and there one can see a coccus in a dilated blood vessel, and in a lymphatic filled with pus cells cocci are fairly numerous. In a number of the distended blood vessels fibrin is present and the vessels are apparently thrombosed.

From the histological findings there are two possible deductions.

1. That the inflammation of the skin is entirely independent of the gun-shot wound, and is due to a primary infection of the skin by the streptococcus.

2. That infection by the streptococcus occurred by way of the wound, that the skin inflammation is secondary to such an infection, and that the case is one of generalized infection with particular localization of the organisms in the skin.

The second possibility seems much the more probable for the following reasons:

1. The involvement of the skin is so general as to preclude an infection of the skin from without and a spread of the inflammation in the skin from a primary point of skin infection.

2. The involvement of the deeper vessels of the cutis

would indicate an infection of the skin by way of the general circulation.

3. The superficial exudation and loss of epidermis seem to be secondary to the vascular involvement.

4. It is known that generalized infection, particularly by very virulent strains of streptococcus, can occur without very marked changes at the point of entry. Death may result rapidly, due to localization of the organisms at some point widely removed from this portal, or death may occur even before there is time for a reaction on the part of the tissue elsewhere. Examples are not wanting of a generalized infection by way of the peritoneum without any apparent peritoneal involvement, and also infection by way of the pregnant uterus.

5. The gun-shot wound offered an ideal portal of entry.

For the reasons given above it would seem that the case ought to be grouped with those exudative inflammations of the skin in which the skin involvement is secondary to and part of a generalized infection.

I conceive, the report continues, the mechanism in the production of the bullæ to be as follows: Marked exudation due to vascular dilatation, the dilatation being caused by the action of the inflammatory agent upon the blood vessels. Interference with the drainage of the exuded fluid, because of a filling up of lymphatics by inflammatory cells and because of thrombosis of some of the veins. Necrosis of the epidermis following the exudation and the production of bullæ.

In conclusion: While the case from a clinical viewpoint is comparatively infrequent, it is by no means unknown as the cases reported by Sherwell (36), Osler, Galloway (37), Blair (38), King Brown (39), and others affirm. Neither are cases wanting in which an erythematous eruption followed by the formation of bullæ, hemorrhage, and death, occurring soon after and attributed to some local disturbance or traumatism. In this group the cases of Crocker (40), Welander (41), Norman Walker (42), Crawfurd (43), and others belong. Again, somewhat allied, may be the bullous dermatoses of Howe (44) after vaccination, of Bowen (45) associated with foot-and-mouth disease in cattle, and the series of cases, mostly in butchers,

PLATE XVII—To Illustrate Dr. W. T. Corlett's Article.

reported by Pernet (46). It is distinctive, however, in owing its possible origin to a gun-shot wound, and the histological findings seem to warrant its being classed as a streptococcus infection. Clinically it answers to what is now understood as erythema exudativum multiforme.

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## *Discussion*

Dr. Oscar T. Schultz, of Cleveland, said Dr. Corlett had covered the ground so thoroughly that there was very little to add excepting to bring forward and emphasize the fact that in the case reported, the general streptococcus infection followed the infection by way of the gun-shot wound rather than that the skin was primarily and independently involved. The infection came by way of the blood vessels and the lymphatics, setting up an infectious capillary thrombosis and a superficial lymphangitis. In that process, Dr. Schultz said, he thought we had an explanation of the exudative nature of the infection. Although the bullet wound did not show any evidences of infection, it was probably by that route that the virulent streptococci gained an entrance and set up a generalized infection.

Dr. Edward H. Shields, of Cincinnati, said that Dr. Corlett's paper had brought to his mind a case which he saw a few years ago. It was first seen by Dr. Spiegler of Vienna, who made no diagnosis, but Kaposi, his chief, made a diagnosis of syphilis. In the course of three or four days he admitted that he was mistaken, and said he was unable to make a positive diagnosis at the time. In the course of a week the erythematous and papular lesions became bullous and subsequently hemorrhagic and necrotic, and the patient died at the end of the third week. The patient's temperature ranged from 38° to 40° C., and on the day of his death it was 40° C. At the post-mortem, simply an enlarged spleen was found. Dr. Spiegler had bacteriological tests made, and it was claimed that he did not find a pure streptococcus infection.

The case was described as a hitherto unknown disease, to which Prof. Kaposi gave the name of *erythema papulo vesico bullosum et necroticum.*

# THE NEED FOR HIGHER REQUIREMENTS IN EXAMINATIONS IN DERMATOLOGY AND SYPHILOLOGY BY MEDICAL COLLEGES AND LICENSING BOARDS

By Dr. Wm. F. Breakey, of Ann Arbor

A consideration of the subject of the above title was undertaken with the belief that the need exists for higher requirements in examinations in dermatology and syphilology, in our own country at least, and could be convincingly shown by data from records of curricula of some teaching colleges and examining boards for license to practise medicine; and that the occasion was timely for presentation before an international body of eminent dermatologists, whose opinions whether in approval or disapproval would carry weight, with teaching and licensing bodies in the professional world.

I should further add, in view of the incomplete analysis and arrangement of facts secured, that I had the mistaken notion that I could procure and collate data with less labor in the time at my disposal, than would be necessary for the preparation of a scientific paper. In this I greatly underestimated the number and volume, and work of abstracting replies and catalogues received from over forty medical colleges, and about the same number of Examining Boards in Medicine, in response to inquiries concerning hours given to teaching students, methods of instruction, etc., and time and space, number and character of questions, as compared with other specialties in medicine, given by examiners to candidates for license.

Before sending out these inquiries, I had the belief that the colleges, with few exceptions, were the more delinquent in the time given to instruction in these subjects. But the calendars and schedules, together with replies from colleges and Examining Boards, show that my belief was not well founded.

A very large majority of examiners admit responsibility for more or less neglect of these subjects, most of the writers adding the opinion that diseases of the skin and syphilis should receive more consideration. The reason given by some examiners, that the state law establishing their Boards does not specify these subjects, does not seem a sufficient explanation, as many other specialties are scheduled for examination as subdivisions of the general heads named in the organic law; and some examiners state that questions pertinent to dermatology and syphilology are asked under general practice and general surgery.

It does not follow that there must be separate heads for questions on these diseases. Where the schedule comprises but eight or ten heads, questions on these subjects, like other special subjects, can be given under subdivisions of general medicine and surgery. Though where twenty or more heads are published on examination schedules, the inference would be that these contain all the special subjects on which examinations will be made. And there would seem to be room for such mention of dermatology and syphilology on official blanks that the applicant for license would see that they are included in the examinations. It is not so material what the reasons are; the purpose is to encourage higher and more uniform requirements. It is in no spirit of hypercriticism, but to secure facts and call more general attention to conditions for which we are all more or less responsible.

A full consideration of this question of more time, it must be conceded, may lead to similar claims for other specialties, both in teaching and examinations, and logically to lengthened courses, all of which is likely to come in the not very distant future. But the immediate question is, whether a disproportion exists in the number and character of cases of diseases of the skin and of some other special fields of medicine, and the implied importance as shown by space and time given each in college curricula and examination schedules.

If dermatology as a specialty in medicine was maintained only for the benefit of dermatologists, and they were mercenary, they should not complain. But as medical science is cultivated for the general good of the race, rather than for

physicians, it is obvious that whatever adds to more general diffusion of all practical medical knowledge, especially such as may be needed in emergencies, should be required by teaching and examining bodies authorized to confer degrees and to license practitioners.

It will be conceded that it is essential that the physician be able to diagnose the exanthemata, to protect the public by advising quarantine when needed, and to avoid panic; yet to do this it is necessary to differentiate from them the various forms of erythema, dermatitis, and syphilis.

The gravity and often unsuspected presence of the latter make it of the utmost importance to the individual, to the family, and to the public, that a correct diagnosis be made and appropriate treatment carried out. In view of the awakened public and professional interest in this phase of the so-called social evil, it is fitting that rational scientific medicine should do its work, and receive its proper recognition in enlightening the public upon the enormity of this evil, and in rescuing its unfortunate victims from the associated and but slightly lesser evils of quackery and imposture.

I should be glad to credit the quotations I make from replies to their authors, but my circular letters stated that the name of college or Examining Board would not be used without authority. And, while the name of the writers in some cases who would not object to being known, would lend greater weight, I do not feel at liberty to vary from conditions offered.

These extracts from letters, both from colleges and Examining Boards, represent opinions of men covering wide territory and in a position to estimate the situation in the field, and impress me as entitled to much consideration.

I have not had time to secure reports from enough European colleges to make fair comparison; the replies from about forty American colleges, including the most prominent, furnish some interesting data and show that, with a few exceptions, a fair amount of time is given to instruction in diseases of the skin and syphilis. Fifteen give instruction in both third and fourth year, lectures, recitations, quizzes, and clinics. Ten give instruction as part of combined course in genito-urinary, venereal, and skin diseases. Four or five have no

separate course, teaching dermatology in a few incidental lectures with general medicine, and syphilis with surgery. Five give only one hour a week; but most of those reporting range from two to four hours a week, and a few, including recitations in sections and hospital work, count six hours or more for part of the term. A large majority exceed the forty hours recommended by the Association of American Colleges.

The following extracts from letters without classification serve to show the plans of teaching in different colleges.

The secretary of a Canadian Province college says:

"We have no special course in dermatology or syphilology. A special skin clinic is held at the hospital once a week for the final students. There are also didactic lectures on the subject, but these are not extensive. The work in syphilology is done partly in the course in surgery."

The secretary of one of the oldest medical colleges in the South, which gives thirty-four didactic and sixteen clinical hours in dermatology in the junior year and nearly an equal number to syphilology in connection with genito-urinary and venereal diseases, adds:

"I am personally of the opinion that both of these subjects are of great importance to the general practitioner, and that in the past an insufficient amount of time has been devoted to the teaching of them."

The secretary of a Pacific coast college that gives one hour a week in the junior year and three in the senior year, says:

"I believe our students get enough work as to syphilis, but might with advantage get more in dermatology, but it seems hard to find time for more in this line. There can be no doubt as to the needs of the general practitioner for more knowledge, especially of dermatology. The average doctor feels that he knows but very little about it, and the only way to overcome this, in my judgment, is to insist on more clinical work in that line."

The dean of a New England college writes:

"We follow the hours adopted by the Association of American Colleges, twenty for lectures and quizzes, and twenty

for clinical work, besides time given to these subjects in hospital and dispensaries. I believe in higher requirements in these and many other subjects."

Another New England college writes:

"The importance of full diagnostic and therapeutic knowledge of these subjects cannot be overestimated. We are trying to do as well as we can under our limitations."

One of the oldest New England colleges, which gives one thirty-fourth of the required time of the junior year and one twenty-first of the required time of the senior year to these subjects, says the subjects mentioned are "of the utmost importance to the general practitioner." He thinks the number of hours devoted to these branches is soon to be increased.

The dean of an old college where both subjects are taught in the senior year, and constitute about four per cent. of the total number of required hours in the year, adds:

"There can be no question as to the importance of these subjects to the general practitioner, but unless the medical courses are lengthened to five years it will be difficult to devote more time to these specialties during the regular curriculum."

The secretary of an interior western college writes:

"It seems to me that it would be better to provide optional courses in addition to the required work in a number of special subjects."

Another western college writes:

"The general practitioner should especially acquaint himself with all syphilitic dermal manifestations, as the consequence of an erroneous diagnosis is far-reaching."

The dean of a long-established college in a central state, that has taught dermatology nearly thirty years, writes:

"The juniors and seniors do section work in the outdoor department every day of the week and receive one clinical lecture a week throughout the whole course. . . . I believe dermatology to be important to practitioners simply because it is necessary to know it. For pedagogic purposes it is one of the most valuable departments as it teaches the student to observe."

"Hebra was in the habit of saying that in dermatology

the diagnosis should be made in the same manner as a mineralogist recognizes a crystal, or a botanist a plant."

Letter from a Pacific coast college in which dermatology has been taught for over twenty years in conjunction with syphilology and genito-urinary diseases reads as follows:

"A knowledge of dermatology and syphilology is of great importance not only because of the various manifestations of the latter disease, but also because of the minute distinctions which are necessary to be made in diagnosis, . . . to realize the importance of syphilis in its social relations, and to teach students that it is not always or necessarily a disease of vice, to protect the innocent offspring as far as possible from its ravages, as well as those who are already susceptible to its infection."

Without attempt at order, I quote extracts from replies as they were received from Examining Boards. The secretary of one of the newer states writes:

"I have not at hand a list of the examination questions in the past, but feel safe in saying that there have been but few questions asked by the Board of this State at the examinations, upon the subjects of dermatology and syphilology. . . . Your inquiry suggests the importance of giving these subjects more attention at the examinations, and I will send your letter to the other members of the Board."

The secretary of a far western state writes:

"Our Board in its examination has paid no particular attention to the subjects of dermatology and syphilology. I cannot at this time remember any questions that have been asked on these subjects."

Here follows a schedule of examinations of twenty-two subjects, and one hundred questions, and several similar schedules have been sent me in which diseases of the skin and syphilis are not mentioned. One may be seen in *Journal A. M. A.*, vol. xlviii., 1907, p. 1629.

The secretary of one of the northwestern state colleges writes:

"I enclose a copy of the schedule of examinations. As you can see, we do not give the very important branches of the study of medicine which you mention any place."

SCHEDULE OF EXAMINATIONS

| | | | |
|---|---|---|---|
| Tuesday, 9 to 12 A.M. | General Surgery, | 8 questions, | |
| | Laryngology, | 2 questions, | |
| | Ophthalmology, | 3 questions, | total 13. |
| Tuesday, 2 to 4 P.M. | Anatomy, | 8 questions, | |
| | Pediatrics, | 4 questions, | total 12. |
| Wednesday, 9 to 12 A.M. | Pathology, | 8 questions, | |
| | Bacteriology, | 2 questions, | |
| | Histology, | 2 questions, | total 12. |
| Wednesday, 2 to 4 P.M. | Materia Medica and Therapeutics, | 7 questions, | |
| | Practice, | 8 questions, | total 15. |
| Wednesday, 4 to 6 P.M. | Neurology, | 5 questions, | |
| | Dietetics, | 4 questions, | |
| | Med. Juris. | 3 questions, | total 12. |
| Thursday, 8 to 10 A.M. | Physiology, | 7 questions, | |
| | Hygiene, | 2 questions, | |
| | Diagnosis, Physl. | 3 questions, | total 12. |
| Thursday, 10 to 12 A.M. | Chemistry, | 7 questions, | |
| | Toxicology, | 3 questions, | |
| | Urinalysis, | 2 questions, | total 12. |
| | | | Total 100 |

The same secretary writes:

"Dr. ——, President of the ——— State Board, is the author of a suggestive "100-questions schedule. . . ." I think that the branches you mention ought to have a place on every schedule."

The secretary of one of the older southwestern states writes:

"We have no examination in the subject of dermatology and syphilology. Under the law we are limited to one examination from each congressional district, there being seven in number; therefore we are unable to cover the entire field as well as might be done otherwise. The only questions we have upon this subject is an occasional one from one examiner on practice. The subjects mentioned are important and I wish that circumstances were so that we could be able to devote more time to them."

The secretary of a northwestern state writes:

"This Board does not examine on these special subjects.

. . . In my opinion they are not sufficiently taught, and from my experience as an examiner, I believe that a large percentage of our medical colleges should elevate their standard of education; and I think a great deal of the fault is in not having the students proficient as to the requirements for admission."

The secretary of the Board of one of the oldest states sends copy of ninety-eight questions under twenty-one heads —one question on syphilis and one, bacteriological, on parasitic diseases of the skin.

The following from the secretary of the Board of an old eastern state expresses report of several other states:

"Our law prescribes the subjects in which applicant for license shall be examined, and the only opportunity that there is of questioning an applicant on any of the collateral branches is by the examiner broadening the scope of his examination. I think it important for dermatology and syphilology to be included in the examination."

Another secretary of one of the older eastern states, similarly to last, writes:

"Under the law these subjects cannot be treated separately, but questions under these topics may be asked under one of the subheads. . . . Under the law which has recently been passed by our legislature questions on both the subjects will doubtless be additionally asked under other subheads."

In one of the old southern states the secretary writes:

"Our Board requires an examination in skin and genito-urinary diseases, asking five out of one hundred questions in this branch. Two of the questions are usually devoted to genito-urinary diseases and three to skin diseases. We find about two per cent. of our applicants fail on this branch, while it assists in causing failure in the general average of about six per cent."

The secretary of an old southern state writes, sending questions for past three examinations:

"I note that the subjects you mention are not asked there, and the reason of this is that we are not allowed to examine in practice. . . . Ours is a peculiar law, but it is the best that we could get from our Legislature."

From the secretary of a large northwestern state:

"As you will notice by enclosed schedule, a special list of questions is not prescribed for dermatology or syphilology. . . . Personally I am of the opinion that the time has arrived when Examining Boards should pay more attention to these special subjects."

The secretary of another state in the northwest writes, deprecating the fact that with ten papers not much can be done on special subjects; yet of half a dozen lists of past examinations in medicine, one or two of the ten questions in each list were well-chosen questions in diseases of the skin. Most of them acute, some of them communicable diseases. There were also some discriminative questions on syphilis.

The secretary of one of the oldest western states says:

"This Board does not give examinations in dermatology and syphilology. . . . There is no time allotted or questions required for either of these subjects."

In one of the largest and most populous of western states a list of twenty-one subjects furnished was by the secretary on official blank, in which is no mention of diseases of skin or syphilis.

From an old eastern-middle state, secretary writes:

"Diseases of the skin and syphilis are classed by our Board with practice of medicine and surgery. There are always two and sometimes three questions in each of these subjects asked. . . . The practice of medicine and surgery are two subjects that most of our applicants fail in. . . . I believe that there is need of more thorough teaching of these subjects by some of the medical colleges, if not by all of them."

The secretary of an old New England state writes:

"Since the organization of our Board, I do not recall that there have been any questions asked on diseases of the skin or syphilis at our examinations. It is a mistake. There surely should be."

The secretary from an old southern state writes:

"Questions on branches mentioned have very seldom formed part of examinations, probably from the fact that we only examine in writing."

The secretary of a northwestern state writes:

"On dermatology and syphilology we do not make a separate examination. . . . We have been trying hard for years to get our standard up where it should be, and hope to make many changes in our law at the next session of the Legislature."

The secretary of one of the newer mountain states writes:

"Our Board of Examiners does not conduct any examination on dermatology or syphilology. . . . One or two questions are sometimes asked on these subjects under the head of pathology and symptomatology. . . . In my opinion there is a woeful lack of proficiency in the profession at large upon these branches. . . . Trusting that time will bring us out of the present chaotic condition of medical licensure, I am, etc."

This writer presents some interesting opinions on the subject of specialism in general, that I regret lack of space prevents copying.

The secretary of a northwestern state says:

"The subjects mentioned have been largely ignored by our Board, . . . a question on syphilology occasionally appearing among the questions on surgery. . . . I think it desirable to elevate the subjects mentioned to the dignity of a separate paper."

From the secretary of a southern state:

"Our Board does not examine in dermatology except incidentally, . . . nor more than an occasional question on syphilis."

Boards in our neighboring Canadian Provinces so far as heard from have no special questions, only as part of medicine and surgery.

The secretary of a prominent middle-northwestern state writes:

"Diseases of the skin and syphilis are not special subjects with our Board and are included or supposed to be included in the questions on practice of medicine. I agree with you that there is need for higher requirements in board examinations in dermatology and syphilology. At our next meeting, in October, I shall call the attention of the members to these

subjects. . . . I am sending you the questions since 1900; very few questions on dermatology have been asked."

From one of the West India Islands:

"Candidates for examination as a rule are not acquainted with local skin diseases, which are to a great extent parasitic."

Letter from the Surgeon-General of the United States Army, which I have permission to publish, states:

"The Army Medical School is intended for graduates from reputable medical schools who pass the required entrance examination for appointment in the Medical Corps of the Army. . . . It is probable that of the ten questions asked in practice, not more than one relates to dermatology and syphilis. The course of instruction at the school does not include either dermatology or venereal diseases, except as possible sources of infection under military hygiene."

The Surgeon-General of the Navy writes, quoting Naval Medical Examining Board:

"It has not been the custom of the Naval Medical Examining Board to give written questions to the candidates before it in either syphilis or dermatology. . . . Examinations in syphilis are conducted orally as a part of surgery and in dermatology under the title of medicine. There are therefore no questions on file. . . . The examinations in both subjects may be said to hold a relatively unimportant place in the examination as a whole, and even under the larger subjects of which they are a part are given minor standing. Candidates as a rule are inclined to look upon an examination in dermatology as in eye and ear, etc., as an unfair requirement.

"It has been the experience of this Board that, generally speaking, candidates have but a vague idea of either subject and that a higher requirement would be futile, unless the questions be taken up primarily by the medical schools and more given and more required there."

A copy of extracts from regulations and instructions in relation to the physical examination of recruits for enlistment in the Navy and Marine Corps, kindly sent with letter, makes it apparent that such examinations could not be intrusted to men who "looked upon an examination in dermatology

as in eye and ear, etc., as an unfair requirement," or who had but a vague idea of either subject.

Syphilis is one of the general disqualifications for recruits in the Navy. The Surgeon-General of the Public Health and Marine Hospital Service writes in reply to inquiry as to the extent to which the examination for entrance into that service requires a knowledge of skin diseases:

"The questions on this subject, asked on examination, come under the heads of Practice and Pathology and Bacteriology. . . . Invariably at least one question deals with this subject, and very often two or three questions during the course of the examination have a direct bearing upon diseases of the skin. . . . The number of questions asked on any one subject is usually four or five, and from this the relative importance given to skin diseases can be judged. . . . Among candidates for entrance into the service a fair knowledge of skin diseases is usually found."

A copy of the "Book of Instruction for the Medical Inspection of Immigrants," kindly forwarded, shows the need of special knowledge to determine the "contagious" and "loathsome" diseases which under the immigration law are "excluded from admission into the United States."

The enlarged area of our own country, international travel, and the great and constantly increasing immigration to our shores, offering increased opportunity for the introduction of communicable disease most frequently manifested in the skin, make it very necessary that immigration and quarantine examiners be skilled in diagnosis of dermal affections.

For similar reasons the general practitioner, who renders first aid in so many cases, should have every facility that teaching can supply to acquire a reasonably good working knowledge in the diagnosis and treatment of at least the ordinary diseases of the skin and syphilis, and the opportunity to demonstrate it before Examining Boards.

The schools teach what their faculties suppose scientific medicine demands, and what the student should learn, much of which is necessarily elementary. The college may confer degrees, but the law, with wise intent, has restricted the au-

thority to license to practise to Examining Boards. These Licensing Boards supplement the college. They determine in what the candidate should be examined, and what per cent. of questions he should answer correctly, to pass or fail, and practically control the situation. If applicants for license are lacking in qualifications that the Examiners believe necessary for the safety of patients, and this fact appears in reports, the colleges interested will surely try to prevent the recurrence of failure with their graduates.

It is not necessary to make comparisons, or to disparage other departments of preparatory work, but it would seem obvious that an examination to determine the fitness of a candidate to *practise medicine* should make sure of his ability to make *practical application* of fundamental teaching received in laboratory, didactic, and clinical work, in diagnosis and treatment, and particularly in emergent conditions where it is important that a correct diagnosis be made.

It seems a rational proposition that higher requirements in examinations by colleges and by Licensing Boards will go far to secure this desideratum.

*Discussion*

Dr. A. Ravogli, of Cincinnati, said he was a member of the Examining Board for the licensing of medical practitioners in the State of Ohio, and in that State they had adopted the minimum standard given out by the American Medical Association. Of the four thousand hours that made up the entire four years' college curriculum, sixty-four hours were to be devoted to the study of syphilology and dermatology, and in all the colleges in the State of Ohio it was obligatory to devote at least sixty-four hours to these branches.

Dr. Ravogli said he was exceedingly interested in the progress of syphilology and dermatology, but he did not think they would ever succeed in compelling the candidates to take a special examination in these branches, because medical students were already overburdened. In the usual examination course, there were ninety questions to reply to in the course of three days. At least two or three of these questions should bear upon syphilis and diseases of the skin, without a special examination in these medical branches.

*End of Second Day.*

## THIRD DAY, WEDNESDAY, SEPTEMBER 11TH

### CLINICAL DEMONSTRATION OF CASES, 9–11 A. M.

#### A Case for Diagnosis

PRESENTED BY DR. J. N. HYDE AND DR. F. H. MONTGOMERY, OF CHICAGO

A man, forty-six years of age, in good general health. In October, 1902, systemic disease with fever, symptoms pointing to gastro-intestinal disturbances, great depression, and loss in weight of fifty-two pounds in three weeks. The following January, pustules, papules, and tubercles began to appear singly or in groups, on different parts of the body. Since that time he had never been entirely free from cutaneous lesions.

Some of the nodules and resulting scars appeared to be typical of lupus vulgaris; others (both active lesions and scars) were apparently equally characteristic of syphilis. The patient did not react to injections of tuberculin, and gave a history of prolonged treatment with mercury and the iodides without improvement. No histological examination permitted.

PROF. THEODOR VEIEL, of Cannstatt, Württemberg, asked if tuberculin had been injected for diagnostic purposes.

PROF. ERICH HOFFMANN, of Berlin, thought it was impossible to make the diagnosis without further observation. The case was probably one of tuberculosis. He called attention to one lesion which resembled Boeck's multiple benign sarcoid (lupoid).

DR. H. HALLOPEAU, of Paris, was inclined to regard the case as one of tuberculosis.

DR. H. RADCLIFFE-CROCKER, of London, advised injections of tuberculin to help clear up the diagnosis.

**A Case of Epidermolysis Bullosa with Atrophy**

PRESENTED BY DR. H. W. STELWAGON, OF PHILADELPHIA

Patient, male, age twenty-seven; disease since early infancy, and appearing most pronouncedly and constantly on the upper back across the shoulders, elbow regions, knee regions, sides of the face, especially about the ears, and hands; atrophic changes in the finger-nails and finger-ends began in early boyhood. When shown before the Congress the eruptive phenomena were most evident on the upper back, and to a less extent on the hands; the nails were gone and the finger-ends were atrophic. Upon the whole, however, there had been a gradual, although slight, lessening in the activity of the process in the past several years. His general health was fairly good. There was no record of a similar case having ever occurred in the family.

DR. H. HALLOPEAU, of Paris, thought the remarkable feature of the case was the cicatrization of the tissues and the loss of the nails. He recalled a somewhat similar case in a young woman in whom the disease began in early infancy.

PROF. THEODOR VEIEL, of Cannstatt, Württemberg, reported a case of epidermolysis bullosa in a woman about thirty, who was first seen by Hebra and subsequently was seen by various men in Paris and London. She presented the same condition of the fingers as in Dr. Stelwagon's case.

**A Case of a Peculiar Atrophic Eruption distributed over Various Parts of the Body, presenting an Appearance Analogous to Linear Nævus, with Especial Involvement of the Sebaceous Glands**

PRESENTED BY DR. WM. T. CORLETT, OF CLEVELAND

The patient was an unmarried woman, thirty-six years old; a secretary. Her father had had some "nervous trouble" following an injury from a fall, and died twelve years later, at the age of sixty-five, of "spinal disease."

The patient's present illness began on the right side of the face when she was five years old, following scarlet fever. It gradually extended, being always sharply defined at the median line. Appearing on the forehead, it extended over the right side of the nose and down over the malar bone; thence over the cheek in front of the ear, over the pomum Adami, about the size of a silver half-dollar. Also a line

extending over the middle of the upper lip in a vertical direction. The next patch occurred several years later over the angle of the left jaw; this was irregularly triangular in outline, covering an area about the size of a silver dollar. The next patch appeared on the lower surface of the forearm.

The eruption also formed a line extending from the occipital region, on the right side, downward and forward over the right side of the neck to the middle of the clavicle; thence it extended downward and onward, and was lost just anterior to the head of the humerus. There was another patch over the gastric region on the right side, extending downward to the symphysis pubis. The next patch appeared two inches to the right of the sternum, extending about half an inch below the sternal end of the clavicle, and about two inches in a vertical direction. The next lesion on the lower extremities began at the upper third of the thigh on its inner surface, extending downward over its posterior surface to the calf and disappearing just above the outer malleolus. During the past eight months a new lesion had appeared on the left temple, which was small and irregular in outline. Two months later a small lesion appeared under the left eye. The lesions consisted, essentially, of broad, atrophic lines in which sebaceous matter was retained in the follicles. This could be squeezed out in the form of a comedo plug. In places, pea-sized accumulations of sebaceous matter occurred. The older lesions presented an atrophic or nævus-like appearance. The histopathology showed an atrophy of the skin with retention of contents of sebaceous follicles in the regions involved.

Dr. Oscar T. Schultz, of Cleveland, showed a number of drawings in connection with Dr. Corlett's case of linear nævus, and gave the following microscopic findings:

Sections from the skin showed large, rounded, cyst-like spaces filled with a stratified, faintly pink-stained material. The cysts were lined by a flattened stratified epithelium, evidently derived from sebaceous gland epithelium. Over the cysts the epidermis was thinned and atrophied. Between them it was hypertrophied. It was thicker than normal and the interpapillary projections were rather long and sometimes branched. The stroma between the

cysts was dense, but showed no evidence of active inflammation.

DR. H. RADCLIFFE-CROCKER, of London, referred to a very similar case that was shown by Dr. Selhorst of The Hague at the 1896 Congress in London. There were many points of resemblance between the two cases. He thought there was no doubt that the condition was of congenital origin.

PROF. THEODOR VEIEL, of Cannstatt, Württemberg, said that in Dr. Selhorst's case, which was referred to by Dr. Crocker, there were both hypertrophic and atrophic lesions, while in Dr. Corlett's case there was atrophy only.

DR. CORLETT, in closing the discussion, said he regarded the case as belonging to the group of linear nævi.

### A Case of Erythema Figuratum Perstans

PRESENTED BY DR. WM. T. CORLETT, OF CLEVELAND

The patient was a girl twenty years old, with a peculiar gyrate and linear eruption on various parts of the body and extremities. The eruption first made its appearance at the age of eleven years following scarlet fever. The family history threw no special light on the course. Only a moderate degree of itching was at times complained of. The general health had always been good.

The case was remarkable in that the new rings found within the old ones carefully followed their evolution. The character of the eruption had not undergone any change, although individual lesions had disappeared in the course of two or three years leaving very slight atrophic scars.

At the International Dermatological Congress in London in 1896, Dr. Colcott Fox showed a case which bore some resemblance to that shown by Dr. Corlett. In Dr. Fox's case, however, the lesions started with pruritic papules which spread; there were also vesicles noted at the margin during one attack. It was also worse in winter. None of these features had been noted in the present case.

DR. OSCAR T. SCHULTZ, of Cleveland, gave the following as the microscopic findings in the case.

A piece of skin was excised so as to include some of the healthy tissue, the erythematous region, and some of the healed area. In the region of the erythematous ridge the small vessels of the cutis

were somewhat dilated and were surrounded by an increased number of lymphocytes. In places there was a separation of the cells of the epidermis. A later stage of this same process led to the formation of minute vesicles within the epidermis. In other places the vesicles lay just beneath the horny layer.

In the healed area the epidermis was somewhat thinner than normal. The papillæ were short and few. Evidently there was a condition of atrophy. The cutis in this region was denser than elsewhere.

There were no evidences of active inflammation. In the recent reddened portion of the lesion the essential changes were vascular dilatation and subsequent transudation. This condition seemed to be followed by some trophic disturbance, which resulted in moderate atrophy of the skin.

Dr. H. Hallopeau, of Paris, regarded the case as one of chronic urticaria, and called attention to the fact that friction brought out the lesions more clearly.

Dr. George Henry Fox, of New York, agreed with the present diagnosis of erythema perstans, but he predicted that in the course of the next few years a decided change might occur in the appearance of the eruption. Tumors were likely to form, and it might turn out to be a case of mycosis fungoides. The speaker recalled a case quite similar to this one, with the same peculiar semi-circles and which for several years was regarded as an unusual form of erythema, but which eventually developed into a typical case of mycosis fungoides.

Dr. H. Radcliffe-Crocker, of London, said he distinctly recalled the case that Dr. Fox had in mind, but he could not agree with the statement that it was analogous to Dr. Corlett's case. The latter bore a closer resemblance to a case that had been reported by Dr. T. Colcott Fox of London. The case of mycosis fungoides mentioned by Dr. George H. Fox had apparently recovered after the use of some quack pills.

Dr. George Henry Fox, of New York, said the patient he referred to took medicine of some sort and later got well and had now remained without a recurrence for seven or eight years. It was the only case of mycosis fungoides he knew of in which a perfect recovery had taken place.

In reply to a question as to whether there was pruritus in his

case, Dr. Fox said that for about a year pruritus was a prominent and most obstinate feature.

DR. CORLETT said there had been but little pruritus in the case he had shown.

DR. DOUGLASS W. MONTGOMERY, of San Francisco, said that when he saw the patient referred to by Dr. Fox, there were raised and slightly desquamating lesions on her body. The other members of her family were healthy, but slightly seborrhœic. The patient had remained well after the use of some purgative pills.

DR. ARTHUR WHITFIELD, of London, said that the microscopic findings in the skin in Dr. Corlett's case, as described by Dr. Schultz, were not at all what one would expect to find in a case of mycosis fungoides. The histological appearance of the lesions of mycosis fungoides was quite distinct, even in the very early stages of the disease.

**A Case of a Marked Bluish Discoloration of the Skin in a Man aged Thirty-nine, which Began at the Age of Twenty-four or Twenty-five and had Undergone no Perceptible Change from Year to Year**

PRESENTED BY DR. WM. T. CORLETT, OF CLEVELAND

The patient was not aware of having taken any drug, such as nitrate of silver, and had always enjoyed good health, excepting when about nineteen years of age when he had "stomach and bowel trouble" for which he took medicine.

Although various opinions were expressed, the exhibitor was of the opinion that it was due to the ingestion of some form of silver taken for the condition mentioned, sometime prior to the appearance of the discoloration.

DR. H. RADCLIFFE-CROCKER, of London, said he regarded the case as one of a form of morbus ceruleus which had been observed in connection with pigmentary cirrhosis of the liver. The speaker referred to a case of this discoloration which was shown by Dr. Mitchell Bruce at a meeting of the Dermatological Society in London, and subsequently published in the *Atlas of Rare Diseases of the Skin.*

DR. JOSEPH GRINDON, of St. Louis, called attention to the fact that while the patient was in an upright position, his face grew distinctly bluer. The roof of the mouth also showed a distinct bluish discoloration.

Prof. Theodor Veiel, of Cannstatt, Württemberg, referred to a case of argyrosis that he had seen in an actor at Mannheim who had been taking nitrate of silver for epilepsy.

Dr. Oscar T. Schultz, of Cleveland, said that in the case shown by Dr. Corlett he had failed to find any silver or other pigment in the skin.

### A Case for Diagnosis

Presented by Dr. Jay F. Schamberg, of Philadelphia

The patient, aged twenty-one years, exhibited a unilateral eruption of two years' duration. The eruption was seen upon the right scapular region where it presented itself in rather streaky patches; it then coursed down the flexor surface of the right arm, forearm, and hand. Upon the hand the eruption involved the inside of the thumb and the radial side of the index finger. The eruption consisted of scaly patches from pin-head to pea-size in the beginning, but which later coalesced and formed larger patches, which were prone to take on a linear form. The individual lesion and the scaling were indistinguishable from that of psoriasis. Vigorous treatment with chrysarobin had produced no effect upon the disease. The case was presented for diagnosis, the presenter taking the view that the eruption belonged to the category of nævus unius lateris, with lesions of a psoriasiform character.

Dr. Joseph Zeisler, of Chicago, said the case shown by Dr. Schamberg was one of unusual interest, first, as regarded the character of the lesions, and second, in their distribution. The distribution was zosteriform, while in character the lesions were psoriatic. In the character of the eruption, he failed to see any resemblance to lichen planus, and he would regard the case as one of psoriasis zosteriformis.

Dr. Boleslaw Lapowski, of New York, referred to a somewhat analogous case which was seen by Dr. P. A. Morrow at the New York Hospital Dispensary and reported under the name of nævus.

Dr. Prince A. Morrow, of New York, said the case shown by Dr. Schamberg was very similar in the distribution of the lesions to that in two cases which he had under his observation a number of years ago at the New York Hospital, which were regarded as examples of nævus unius lateris. In one, where the lesions oc-

curred on the forearm, palm, and fingers, there was an extraordinary degree of epidermal proliferation, almost as abundant as one saw in psoriasis. In the other case the lesions were situated on the posterior aspect of the shoulders and running down the arm; they exhibited a peculiar annular configuration as well as this remarkable epidermal proliferation. Both of these cases might easily have been mistaken for psoriasis, but their history and the absence of any indications of psoriasis proved them to be cases of nævus, and both were published and illustrated under that title.

In the case shown by Dr. Shamberg, the speaker said, the distribution of the lesions and their duration would seem to exclude psoriasis.

**A Case of Leukoplakia Buccalis in a Negro**

PRESENTED BY DR. HOWARD FOX, OF NEW YORK

Patient, æt. fifty-two; married; U. S.; Porter.

There was no history of syphilis. Patient had taken a moderate amount of liquor regularly all his life. Formerly he was a confirmed pipe smoker. Pepper and spiced foods have always made his mouth sore. There was no digestive trouble; he suffered a good deal from bad teeth. The patches had existed, patient thought, about five or six years. They were firm, grayish, adherent, bilateral, and extended from the angle of the mouth, posteriorly in a direction parallel with the teeth. A year ago a "cold sore" appeared on his lip. Seven months ago when seen for the first time, there was a suspicious looking warty growth on the lower lip. A "V"-shaped piece of the lip was excised and the glands removed.

**A Case of Idiopathic Multiple Hemorrhagic Sarcoma (Kaposi)**

PRESENTED BY DR. M. B. HARTZELL, OF PHILADELPHIA

Dr. Hartzell exhibited a man, sixty-nine years old, with an affection of the legs presenting the following features: On the dorsum of the left foot and the anterior surface of the leg were numerous round, oval, and irregularly-shaped, slightly elevated, very dark-brown and slate-colored, for the most part smooth, but in places slightly scaly, firm patches. On the calf were many pea- to hazel-nut-sized confluent, firm nodules similar in color to the patches on the anterior surface of the leg, forming a large uneven patch covering the entire calf. Over the outer malleolus was a single nut-sized

tumor with a thick pedicle. Upon the right leg were a number of smooth, flat patches similar to those already described. The left leg was markedly swollen, being several inches larger in circumference than the right. The duration of the disease was fourteen years.

**A Case of Keratosis Follicularis or Darier's Disease: Psorospermosis Follicularis**

PRESENTED BY DR. H. W. STELWAGON, OF PHILADELPHIA

Patient, male, aged forty, of good health and family record. Disease began fifteen years previously, and up to several years ago, steadily increased in extent, involving a large part of the entire surface, being most marked on trunk anteriorly and posteriorly especially toward the middle line; also quite markedly about the elbow and knee regions, hands, feet, and face. For the past several years under exposure to the Roentgen rays there had been some improvement, and the activity of the process had been somewhat variable. There had existed for some time and was still present an associated seborrhœic condition of face, scalp, and hands. Family history was good; no record of a similar disease.

DR. JOSEPH GRINDON, of St. Louis, said that in a case of keratosis follicularis which recently came under his observation, one of the most remarkable features was the improvement that occurred in cold weather and the aggravation of the symptoms in the summer.

**An Unusually Extensive Folliculitis and Perifolliculitis; its Connection with the So-called Tuberculides**

PRESENTED BY DR. WILLIAM B. TRIMBLE, OF NEW YORK

J. L., born in the United States, of Scotch parentage, forty-six years of age, a lumberman. His mother died at seventy-two from "some bronchial trouble." The father, who was a hard drinker, died at fifty-five "from an operation." There was a history of a skin disease in the father, limited to the buttocks, which the man thought was the same as his own. The patient did not remember having any of the diseases of childhood, his only illness being an attack of pneumonia six years ago, from which he made a quick and uneventful recovery.

The disease began in his eighth year and seemed to have

a peculiar predilection for those places where there was any pressure or friction. It appeared first on the buttocks, apparently from horseback riding; it occurred in exacerbations, ten to fifteen lesions in different stages of development being present at the same time; a period of quiescence then intervened, only to be followed by a fresh outbreak of the malady. The lesion itself would begin as a subcutaneous nodule, movable under the skin, painless, and could be felt before it became visible. The size varied from a small pea to that of a hazel-nut; in from seven to ten days the nodule would reach its height, the usual size being that of a pea; it would then remain stationary for about two weeks, during which time it would take on a slight rose color, becoming very slightly yellowish in the centre. At this stage the lesions were mildly tender on pressure. Rupture would then take place (at about the end of the third week), sometimes by one opening and sometimes by several, from which would exude a small amount of slightly sticky, sanguinolent substance, about the consistence of cream. This would continue for a few days when the discharge would dry into a crust, which would adhere for about a fortnight, finally dropping off, to leave a pigmented scar. The whole process from the beginning of the nodule to the resolution of the exudate and scar formation, would take from six to eight weeks. Rarely some of the tumors would remain dormant for months, finally undergoing resolution without suppuration. In those localities where the lesions were numerous and in close proximity, coalescence would frequently occur.

*Histo-Pathology.*—The lesion at height of development consisted of a much dilated follicle, with partially destroyed walls and a dense intra- and peri-follicular infiltration, composed of polynuclear and plasma cells, the polynuclear predominating.

Dr. H. Radcliffe-Crocker, of London, regarded the eruption on the body as acne, and that on the scalp as a pustular folliculitis.

**A Case of Multiple Rodent Ulcer**

Presented by Dr. T. Caspar Gilchrist, of Baltimore

A man, aged sixty-three, with a large ulcerative epitheli-

oma, almost covering the right shoulder blade. There were nineteen other lesions scattered over the body, face, scalp, and upper extremities. A majority of the lesions were about 2–3 *cm.* in diameter and were of a dull red color, flat, with well-defined rather firm edges, dry and slightly scaly. On the face and scalp there were thirteen lesions. The duration of the whole trouble was twenty years. Excised portions from different lesions showed on section typical malignant overgrowth of epithelioma or rather of rodent ulcer. There was no glandular involvement. The patient's health had begun to be undermined during the last year only.

### A Case for Diagnosis

PRESENTED BY DR. T. CASPAR GILCHRIST, OF BALTIMORE

A negro child, aged five years, showing a well marked eruption, which was ichthyosis vulgaris. The case was shown because the disease was so rare in the negro race. There was no history of heredity. The child was quite healthy otherwise.

### A Case of Leprosy—Mixed Form

PRESENTED BY DR. CHARLES T. DADE, OF NEW YORK

A young woman, twenty-eight years old, native of Barbadoes, married, two children. She had been in this country but five months and said when she came here last April her face was free. This case came under the observation of the demonstrator only the day before presentation, having been reported to the Board of Health as a case of small-pox, and it was through the courtesy of Dr. S. Dana Hubbard of the Health Board that Dr. Dade presented it. If the woman's story was true the development was very rapid, for the face showed numerous nodular lesions over the cheeks, forehead, and chin and presented a very typical appearance. Over the arms and body, besides nodules, were macules from an inch to two inches in diameter, round and oval, brownish in color, and slightly scaly. Anæsthesia in these was not complete. These macules were the only lesions she noticed up to the time she came to this country last spring. She had been treated with X-Rays but said without benefit as the nodules were increasing.

DR. H. HALLOPEAU, of Paris, regarded the case as one of leprosy.

In connection with the treatment, he suggested the use of atoxyl, an arsenic preparation, from which he had seen excellent results.

### A Case of Lupoid Sycosis with Bleb Formation

PRESENTED BY DR. JAY F. SCHAMBERG, OF PHILADELPHIA

The patient, a man aged sixty-seven, developed a sycosis in 1886. Since that period he had suffered persistently from the disease, involving the bearded region of the sides of the face. About 1895 the affection changed its character from an ordinary rebellious sycosis and took on the appearance of a lupoid sycosis. At the present time there were extensive scarring and atrophy involving the entire cheeks from the zygoma to the border of the jaw. The skin was whitish and atrophic, and velvety to the finger passed over the surface. There was complete absence of hair over the affected region. A remarkable feature of the disease was the occurrence, chiefly upon the spreading border, but also elsewhere, of flat blebs. These appeared every few days and had been developing for almost a period of ten years. The patient in addition had *an essential shrinking of the conjunctivæ* in marked degree. Microscopic study of a section of the skin showed complete degeneration and atrophy of the hair follicles and sebaceous glands and their substitution by fibrous tissue.

### A Case of Lupus Erythematosus of Twelve Years' Duration in a Colored Woman

PRESENTED BY DR. JAY F. SCHAMBERG, OF PHILADELPHIA

This patient had suffered from the disease which she exhibited for twelve years. There was a large patch covering the greater part of the right side of the face and neck. Over this area there was almost complete loss of normal pigment of the skin, the patch being a dead white color save for islets of pigmentation here and there, and a certain degree of redness. The border was slightly raised and infiltrated. The skin over certain areas of the patch exhibited a considerable degree of thickening. A small superficial patch was present under the right eye and one also upon the tip of the nose. This patient was subjected to X-ray treatment in another city with a considerable aggravation of the disease, the patch spreading much beyond its former limits. She was now receiving injections of tuberculin, T. R., with apparent benefit.

**A Case of Lupus Vulgaris of Many Years' Standing Practically Cured with the X-Ray**

PRESENTED BY DR. JAY F. SCHAMBERG, OF PHILADELPHIA

A young woman, aged thirty-two years, developed eight years previously a lupus vulgaris which ran an extremely rapid course for this disease. The cheeks, nose, upper lip, and sides of the face were extensively involved. The usual treatments were employed without benefit. During the past three years the patient had received in the neighborhood of two hundred X-ray treatments, with the result that she was now practically cured. One or two pinhead-sized nodules remained upon the ear and one or two more were scattered elsewhere. The cosmetic result was quite as good as that secured by the Finsen light, save that there was a moderate amount of telangiectasis in the scar tissue.

THE REGULAR SESSION OF THE CONGRESS WAS CALLED TO ORDER AT 11 A.M.

PROF. THEODOR VEIEL, of Cannstatt, Württemberg, and DR. H. HALLOPEAU, of Paris, Vice-Presidents, in the Chair.

# DIE HAUTBLASTOMYKOSE (DERMATITIS BLASTOMYCETICA)

VON PRIVATDOCENT DR. MORIZ OPPENHEIM, WIEN

Aus der k.k. Universitätsklinik für Syphilidologie und Dermatologie in Wien (Vorstand Prof. Dr. Ernst Finger)

Die Tatsache, dass Sprosspilze (Blastomyzeten, Hefepilze) pathogen sein können, ist noch nicht lange bekannt. Zuerst wurde deren Pathogenität für Tiere einwandfrei bewiesen; einerseits durch Tierkrankheiten, bei denen als Erreger Sprosspilze gefunden wurden, anderseits durch das Experiment, indem es gelang, durch Injektion verschiedener Hefearten Krankheiten bei Tieren zu erzeugen. So hat Metchnikoff im Jahre 1884 bei erkrankten Daphnien einen Blastomyzeten beschrieben, den er Monospora bicuspidata nannte, deren Sporen die Darmwand durchbohren, ins Blut gelangen und durch Allgemeininfektion das Tier töten; Kultur gelang nicht.

Rivolta fand bei einer rotzähnlichen endemischen Krankheit der Pferde, bei der sogenannten Lymphangitis epizootica (1883) stark lichtbrechende Körperchen im Eiter, die er "Cryptococcus farcinimosus Rivoltae" nannte, dessen Kultur erst 1895 Fermi und Aruch gelang, die auch die Hefennatur des Mikro-organismus feststellen konnten.

Bei einer ähnlichen Krankheit der Pferde und Rinder in Japan konnte Tokishige eine Hefen- resp. Oidienart nachweisen,

deren Kulturen für Pferde pathogen waren; in Russland war es Tartakowsky, der bei dem "afrikanischen Rotz" der Pferde ähnliche Mikro-organismen auffand.

Ferran, Memmo, Sirleo und Maffucci, Corselli und Frisco, etc., fanden bei verschiedenen Tieren in den verschiedensten Organen Blastomyzeten. Sanfelice stellte die Taubenpocken als Resultat einer Blastomyzeteninfektion hin.

Der Erste, der experimentell Hefen Tieren injizierte, war Claude Bernard. Er spritzte (1848) Hunden Bierhefe in die Venen bei Gelegenheit seiner Zuckeruntersuchungen; die Hunde gingen ein. Er meinte auch, dass Hefen in die Gallenblase gelangen können. Diese Tatsache ist uns historisch interessant, steht aber mit unserer Frage in keinem direkten Zusammenhang. Grohe (1869), Popoff (1872) verwendeten zu ihren Impfungen unreines Material, so dass ihre Resultate nicht einwandfrei sind. Neumayer (1891) und Mosler, Raum (1891) und Hueppe (1892) injizierten Hefen mit positivem Erfolg. Das grösste Verdienst in bezug auf die experimentelle Tierblastomykose haben Sanfelice, der aus Fruchtsäften seinen Saccharomyces neoformans züchtete (1895), und Lydia Rabinowitsch, die unter 40 Hefestämmen verschiedenster Herkunft acht tierpathogene fand. Weitere Versuche in dieser Hinsicht stellten an Casagrandi, Nesczadimenko, Klein, Busse und in letzter Zeit Cohn, Buschke und Sternberg. Aus allen diesen Untersuchungen geht zur Gewissheit hervor, dass die Hefen für Tiere insoweit pathogen sind, als sie Entzündung, Eiterung und pyämische Infektion hervorrufen können.

Wie verhält es sich nun mit der *Pathogenität* der Sprosspilze beim Menschen? Wir können der Literatur nach vier Arten des Vorkommens von Sprosspilzen beim Menschen unterscheiden:

1. Hefepilze kommen als unschädliche Schmarotzer auf der Haut und auf Schleimhäuten vor.

2. Hefepilze erzeugen Oberflächenerkrankungen der Haut und Schleimhäute.

3. Sprosspilze sind die Ursache maligner Neubildungen.

4. Sprosspilze wandern von der Oberfläche ins Gewebe ein, erzeugen hier einerseits Abszessbildung, anderseits Granulationsgewebe mit Neigung zum Zerfall oder zur Bindege-

websneubildung und verursachen auch durch Eindringen in die Blutbahn Allgemeininfektionen.

Was Punkt 1 betrifft, so ist es bekannt, dass auf der Haut und den Schleimhäuten, im Stuhl, im Urin, im Magen- und Darmkanal, kurz fast in allen Gegenden des Körpers und in allen Sekreten und Exkreten hefeähnliche Gebilde gefunden wurden. Dies ist nichts Wunderbares, da ja Sprosspilze ubiquitär vorkommen.

Ad 2. Hier besteht die grosse Schwierigkeit zu entscheiden, ob die Hefen im ursächlichen Zusammenhang mit der Oberflächenerkrankung stehen oder ob sie sekundär eingewandert sind. Zu dieser Kategorie gehört die am längsten bekannte Erkrankung, der *Soor*, hervorgerufen durch Oidium albicans. Wir rechnen nämlich, dem Vorgange Buschkes folgend, die Oidium-arten, die sich von den echten Hefen nur durch stärkere Faden- und Lufthyphenbildung unterscheiden, zu den Sprosspilzen. Die Stellung der Sprosspilze selbst ist ja noch nicht genau präzisiert, indem die einen für die Sprosspilze oder Blastomyzeten eine Sonderstellung beanspruchen (Hansen), die anderen sie als Entwicklungsstadien der Schimmelpilze (Hyphomyzeten, Brefeld) ansehen, wofür die Oidien einen Beweis abgeben. Es muss das deshalb hier erwähnt werden, weil die amerikanischen Autoren, namentlich Ricketts, den Namen *Oidiummykose* für ihre Krankheitsfälle einführen wollen. Dies ist jedoch nur geeignet, die Verwirrung, die in der Frage der Sprosspilzerkrankungen herrscht, zu erhöhen. Wir wollen auch hierin dem Beispiele Buschkes, der ja grosse Verdienste in dieser Frage hat, folgen und vorläufig alle durch Sprosspilze oder ähnliche Pilze beim Menschen hervorgerufenen Erkrankungen mit dem Sammelnamen *Blastomykose* bezeichnen. Für den Soor und seine verwandtən Arten ist es nun durch zahlreiche Arbeiten festgestellt, dass er pathogen für Schleimhäute ist (Bernard, Zenker, Schmal, Grawitz, Parrott, Klemperer, etc.), aber auch ins Innere des Körpers eindringen kann. Nicht so sicher ist für die echten Hefen bewiesen, obwohl zahlreiche Autoren sie bei Oberflächenerkrankungen, wie Angina, Tonsillitis, Gastroenteritis, Vaginitis, Pharyngitis, etc., nachgewiesen haben.

Was den ursächlichen Zusammenhang der Entstehung

maligner Geschwülste mit dem Vorhandensein von Blastomyzeten betrifft (Punkt 3), so haben die überaus zahlreichen Untersuchungen der letzten Jahrzehnte zu keinem positiven Resultat geführt. Die Mehrzahl der Autoren spricht sich dagegen aus, doch wollen gewichtige Forscher, wie z. B. Busse, die Sache noch nicht als abgeschlossen betrachten und ermuntern zu neuen Versuchen.

Die vierte Frage: Können Hefen *im Gewebe* des Menschen pathologische Veränderungen hervorrufen? wurde durch drei fast gleichzeitig erfolgte Beobachtungen beantwortet. Diese drei Beobachtungen zeigen uns auch gleichzeitig die verschiedenen Formen der Hefeerkrankungen des Menschen. Es waren dies die Beobachtungen von Busse-Buschke, Gilchrist und Curtis.

Der Fall Busse-Buschke (Greifswalder mediz. Verein, Juni 1894) betraf eine 31 jährige Frau, bei der vor einigen Jahren an Stirn, Nacken und Gesicht rundliche, scharf konturierte Geschwüre mit unterminierten Rändern, zäh glasigem Sekret entstanden. Ausserdem zeigten sich akneartige, blaurötliche Knötchen mit gleichem Sekret; die Geschwüre vergrösserten sich von Linsen- bis zu 5-Pfennigstückgrösse. Es traten hinzu Knochenherde in der Tibia, in deren Sekret Busse als Erster die aufgefundenen Parasiten als Hefen deutete und an einer Rippe; unter Entkräftung erfolgte der Tod. Bei der Obduktion fanden sich Knoten in der Lunge, Niere und Milz. Histologisch zeigte die Hautaffektion (ebenso wie die übrigen Herde) riesenzellenhaltige Infiltrate mit zentralem Zerfall, ausserdem im Epithel Wucherungsvorgänge. In den Infiltraten, Riesenzellen, zwischen und in den Epithelien doppelt konturierte Hefen von charakteristischen Eigenschaften. Kultur und Tierexperiment positiv.

In den Geschwüren der Haut wies Buschke zuerst die Hefennatur der Parasiten nach, früher als Gilchrist der kulturelle Beweis der Blastomyzetennatur seiner Parasiten geglückt war, obwohl Buschke selbst ebenso wie Gilchrist die Parasiten zuerst für Protozoen hielt.

Der Fall Gilchrist, der unter dem Titel "Protozoic (coccidioidal) Infection of the Skin" gemeinsam mit Rixford publiziert wurde (im Mai 1894 zeigte Gilchrist in der "American

Dermatological Association" Schnitte einer besonderen Hautaffektion), ist kurz geschildert folgender: 70 jähriger Farmer von den Azoren, Beginn vor 11 Jahren mit ovalen Knötchen im Nacken, dann an den Augenbrauen, weiterhin Entstehung papillärer Wucherungen mit eitriger Sekretion, sowie Geschwüre, die sich auf Nase, Lippe, Wangen und Handrücken ausdehnten. Nach langem Stationärbleiben des Prozesses traten später Drüsenschwellungen, Somnolenz, Schwäche und Husten hinzu und nach Auftreten von Abszessen im Hoden und linken Bein starb der Patient. Bei der Obduktion zeigten sich tuberkelähnliche Knoten in Lungen, Leber, Milz, Peritoneum, ein granulationsartiger Herd in der linken Tibia.

Klinisch wird von den Autoren die Ähnlichkeit der Hautaffektion mit *Tub. verrucosa* hervorgehoben; auch der Obduktionsbefund schien Tuberkulose zu ergeben. Aber die histologische Untersuchung ergab neben zahlreichen riesenzellenhaltigen Infiltraten im Corium, Epithelhyperplasie und miliaren Abszessen im Rete, zahlreiche doppelt konturierte kreisrunde Parasiten von 15–27 $\mu$ Durchmesser, teils inter-, teils intrazellulär, welche wie oben erwähnt ursprünglich als Protozoen angesprochen, später jedoch von Gilchrist selbst und von Buschke mit grosser Wahrscheinlichkeit als Blastomyzeten gedeutet wurden. Kultur wurde nicht ausgeführt, Tierexperiment nicht einwandfrei.

Den 3. Typus der Blastomykose repräsentiert der Fall von Curtis. Er wurde im Juli 1895 vorläufig von Curtis mitgeteilt.

Ein 20 jähriger Mann mit einem faustgrossen Tumor der Inguinalgegend, Beginn vor 1½ Jahren; später traten Tumoren in der Haut des Stammes, Nackens und der Extremitäten hinzu, welche zum Teil zu Geschwüren zerfielen. Exitus; Sektion wurde nicht gemacht. Histologisch zeigten sich die Tumoren zum allergrössten Teile aus ungeheuren Mengen von Hefepilzen zusammengesetzt und nur sehr geringgradige entzündliche Vorgänge sowohl in den Tumoren selbst als auch in ihrer Umgebung. Kultur und Tierexperiment positiv.

Diese drei Typen der Hautblastomykose, die man kurz am besten mit den Bezeichnungen *akut-pyämischer Typus* (Fall Busse-Buschke), *chronischer Hauttypus* (Gilchrist) und

*Tumorentypus* (Curtis) belegen könnte, kommen nicht gleich häufig vor. Der Curtische Typus ist bis jetzt vereinzelt geblieben, obwohl es manchen Autoren gelungen ist, bei Tieren experimentell ähnliche Bilder zu erzeugen. Der akut-pyämische Typus wurde mehrmals, wenn auch selten seit dem Jahre 1894 beobachtet. (Fälle von Ormsby-Miller, Ophüls-Moffit, Montgomery.) Der häufigste Typus ist der der chronischen Hautblastomykose, von Gilchrist zuerst beschrieben und wohl auch der praktisch hauptsächlich in Betracht kommende. Bis 1903 waren etwa 40 Fälle in Amerika gesehen worden; in Europa war die Krankheit unbekannt. Der erste derartige Fall, der mit grosser Wahrscheinlichkeit in die Kategorie dieser chronischen Hautblastomykosen gehört, kam am 16. Februar 1903 in unsere Klinik und wurde von mir im März 1903 in der Wiener dermatologischen Gesellschaft demonstriert. Der Fall wurde dann in Gemeinschaft mit meinem leider so früh verstorbenen Kollegen Löwenbach im "Archiv f. Dermatologie u. Syphilis" ausführlich publiziert. Aus dieser Publikation entnehmen wir folgendes:

Ein 26 jähriger Feldarbeiter aus Mähren, nie ausserhalb Mährens und Niederösterreichs domizilierend. Die Affektion der Nase soll seit 14 Jahren bestehen.

Die Nase zeigt eine Deformation ihrer häutigen Anteile. Die Haut an der rechten Ala nasi hat eine diffus narbige Beschaffenheit, ist von bläulichroter Farbe, so dass ein gesprenkeltes Aussehen entsteht. Die Grenze nach oben und gegen die Seitenteile bildet eine unregelmässige zackige Linie. Das buntscheckige Aussehen des betroffenen Bezirkes wird noch vermehrt durch eine beträchtliche Anzahl (20–25) eigenartiger Knötchen. Dieselben sind meist hanfkorn- bis kaum schrotkorn-gross. Ihre Farbe ist gelblichrot mit einem Stich ins livide, ihr Glanz ein beträchtlicher, so dass sie stellenweise durchscheinend werden. Sie sind kreisrund und springen halbkugelig über das Niveau der Haut vor. Die Konsistenz dieser Knötchen ist ungemein weich; bei leiser Berührung mit der Nadelspitze drückt man die Oberfläche wie die Kuppe eines Herpesbläschen ein und beim Anstechen tritt eine gelblichgraue, dickliche Masse zutage.

An einer Stelle ausserhalb der narbig veränderten Area, nach aussen vom linken, inneren Augenwinkel, zeigt sich eine Gruppe analoger Knötchen in einer Reihe angeordnet.

Entsprechend der linken Ala nasi wird die diffus narbige, glatte Fläche unterbrochen von einer zackig unregelmässig konturierten tiefen Ulzeration, welche auf die muköse Seite der Nase übergreift und reichliches seröses Sekret absondert. In der Umgebung dieses Geschwüres zeigen sich keinerlei an Lupusknötchen erinnernde Gebilde, dagegen vereinzelte, den kleinen Knötchen der rechten Nasenseite und des Augenwinkels ähnliche Effloreszenzen und nach aussen gegen die linke Nasolabialfalte hin ein Konglomerat warzig zerklüfteter Effloreszenzen vom Aussehen spitzer Kondylome. Im häutigen Nasenseptum, 1 cm. oberhalb des Introitus, besteht eine runde Perforationsöffnung von ½ cm. Durchmesser, umgeben von leicht erodierten, speckig belegten, hell geröteten Rändern.

Die Diagnose schwankte zwischen Lupus, Syphilis und Epitheliom und selbst ein so hervorragender Diagnostiker, wie der damalige Chef der Klinik, Hofrat Neumann, musste dem klinischen Bilde der Affektion eine Sonderstellung einräumen. Diese wurde durch die mikroskopische Untersuchung des Inhaltes der kleinen Knötchen und des Sekretes, sowie durch histologische Untersuchung mehrerer exzidierter Hautpartien bestätigt. Es fanden sich nämlich im Sekrete in grosser Menge doppelt konturierte, stark lichtbrechende, kugelrunde oder ellipsoide Körper, manchmal mit fein granuliertem Zentrum; bei Zusatz 10% iger Kalilauge wurden sie besonders deutlich. Ihr Durchmesser betrug 3–5–12$\mu$; an manchen Stellen zeigten sich kleine Kugeln in Zusammenhang mit grösseren Sprossformen. Mit Methylenblau, Karbolfuchsin, nach Gram und Weigert waren sie leicht färbbar. Auch in den Knötchen waren diese Gebilde, die ja nur als Hefezellen anzusprechen waren, in grosser Menge nachweisbar. Die histologische Untersuchung ergab intrakorneale Pustelbildung mit miliarer Abszessbildung in der Epidermis nebst Wucherung der Stachelzellenschicht und stellenweise mächtigem Infiltrat des Papillarkörpers. Allenthalben fanden sich Blastomyzeten, reichlich in dem Stratum corneum, spärlich in den Abszessen und Infiltraten. Kulturversuche und Tierexperimente waren

negativ; dagegen war die von Bevan empfohlene Jodtherapie, Jodkali in steigenden und grossen Dosen, von glänzendem Erfolge begleitet. Patient wurde nach einer 4 wöchentlichen Jodkur geheilt entlassen. (Die Veränderungen des klinischen Aussehens durch die Behandlung sind auf der unserer Abhandlung beigegebenen Tafel ersichtlich.) Das eigenartige klinische Bild, der konstante mikroskopische Blastomyzetenbefund im Sekrete im Gewebe, sowie der eklatante Erfolg der Therapie bildeten die Veranlassung, den Fall, trotz des negativen Ausfalles der Kulturversuche und Tierexperimente, als wahrscheinliche Blastomyzeteninfektion der Haut hinzustellen.

Wir sprachen damals die Vermutung aus, dass manche Fälle, die bisher als Lupus, Syphilis oder Epitheliom diagnostiziert worden waren, vielleicht als Blastomyzeteninfektion gedeutet werden können und dass von jetzt ab, da die Aufmerksamkeit auf diese Affektion gelenkt worden war, gewiss auch in Europa der von uns beobachtete Fall nicht isoliert bleiben würde. Und in der Tat, im letzten Jahre sind mehrere Fälle dieser Art bekannt geworden. So von Sequeira in London, Dubreuilh in Frankreich, Samberger in Prag (2 Fälle), und auch wir hatten Gelegenheit, an der Klinik Prof. Finger, drei weitere Fälle von wahrscheinlicher Blastomyzeteninfektion zu beobachten.

Der 2. Fall wurde vom Kollegen Brandweiner im "Archiv f. Derm. u. Syph." unter dem Titel: "Zur Frage der Blastomykose der Haut und über ihre Beziehungen zur Folliculitis exulcerans serpiginosa nasi (Kaposi)" publiziert. Brandweiner identifiziert nämlich beide Krankheiten und auch das spricht für eine Sonderstellung des klinischen Bildes. Wieder war die Affektion an der Nase lokalisiert.

Bei einem 37 jährigen Schuhmacher aus Galizien, der nie Oesterreich verlassen hatte, zeigte sich die Haut der linken unteren Nasenhälfte gerötet und infiltriert, die Rötung ist unscharf begrenzt. Innerhalb der allmählich ausklingenden Rötung finden sich braunrote, eingestreute Knötchen von Hanfkorngrösse. Die meisten dieser tragen im Zentrum eine Pustel, deren Inhalt weissgelblich durchschimmert. Die zentralen Anteile der Affektion zeigen Geschwüre, papilläre

Wucherungen und Narben. Die Geschwüre sind meist streifenförmig, ihr Grund lochartig, mit bräunlichen Borken bedeckt. Die papillären Wucherungen zeigen hellrote Farbe, blumenkohlartiges Gefüge und erheben sich nur wenig über das Niveau der Umgebung, in welchem zahlreiche, ziemlich junge Narben sichtbar sind. Diese zeigen unregelmässig zackige Begrenzung, sind nicht pigmentiert, weisslich oder hellrosa und fühlen sich zart an.

Die Affektion besteht nach Angebe das Patienten seit einem halben Jahr. Der histologische Befund einer exzidierten Hautpartie, sowie die mikroskopische Untersuchung des Sekretes ergab dieselben Resultate wie in unserem ersten Fall. Ebenso prompt wirkte Jodkali; auch hier waren Kulturversuche und Tierinokulationen negativ.

Der 3. und 4. Fall, die wir an der Klinik Prof. Finger beobachten konnten, sind noch nicht publiziert; über den 4. Fall wurde von mir am Berliner internationalen Dermatologenkongress, gelegentlich der Blastomykosedebatte im Anschlusse an die Demonstration der Präparate Dubreuilhs referiert.

Der 3. Fall ist folgender:

Malke B. (Journ.-Nr. 17. 200, Prot.-Nr. 773, Z. 74), 40 Jahre alt, verheiratet, Mutter fünf gesunder Kinder. Die Nasenaffektion begann vor zwei Jahren mit Rötung und Knötchenbildung. Patientin konsultierte mehrere Aerzte, die mit Salben erfolglos behandelten. Sie sucht behufs Operation ihres "Lupus" die Klinik auf. Lues negiert; auch keine Zeichen einer solchen; kein Abortus.

Status präsens vom 9. Juli 1903.

Patientin ist klein, von grazilem Knochenbau, sehr schlecht genährt; es besteht eine hochgradige Kyphose der Brustwirbelsäule. Innere Organe normal.

Die Nasenspitze und die Nasenflügel, sowie das häutige Septum düster rot gefärbt. Die Rötung ist am intensivsten an der Spitze und dem rechten Nasenflügel und nimmt allmählich ab, um ungefähr in der Mitte des Nasenrückens in die normale Hautfarbe überzugehen. Dabei besteht eine geringgradige Anschwellung der geröteten Partien. Auf diesen befinden sich einerseits seichte unregelmässige konturierte Substanzverluste von Stecknadelkopf- bis über Linsengrösse,

die einen leicht wegwischbarenspeckigen Belag zeigen, anderseits hirsekorngrosse Knötchen von gelblichweisser Farbe und eigentümlich durchscheinender Beschaffenheit. Diese Knötchen sowie die Substanzverluste liegen teils oberflächlich, teils in Vertiefungen, die durch kreuz und quer verlaufende, kurze, glänzende, runde Narbenstränge gebildet werden. Beim Zerdrücken oder Anstechen der Knötchen erscheint eine klebrige Flüssigkeit. Die mikroskopische Untersuchung dieser, sowie des Sekretes der Geschwürchen zeigt neben Eiterzellen, Detritus, Epithelzellen, Blutkörperchen fast ausschliesslich runde oder ovale stark lichtbrechende, doppelt konturierte Gebilde, die besonders deutlich bei behandlung mit 30% iger Kalilauge zum Vorschein kamen. Auch Formen, die seitliche Knospen zeigten, waren sichtbar.

Noch deutlicher war dies im mit Methylenblau gefärbten Trockenpräparate. Die Grösse dieser Gebilde variierte von 6–20 $\mu$ und darüber, sie waren verschieden intensiv färbbar und zeigten oft im Innern Granulationen und Vakuolen. Es konnte kein Zweifel darüber obwalten, dass diese Körper den in meinem ersten Falle dargestellten hefeähnlichen Zellen entsprachen, und ich nahm keinen Anstand, auch diesen Fall als eine wahrscheinliche Blastomyzeteninfektion der Haut im Sinne der Amerikaner hinzustellen. Der Befund der sprosspilzähnlichen Gebilde war konstant und konnte auch im Gewebe erhoben werden.

In der Umgebung der Nase vereinzelte Akneknötchen und zahlreiche Epheliden. Das Septum und die Schleimhaut der Nasenhöhle waren intakt, ebenso die Mundschleimhaut. Die Haut des übrigen Körpers zeigte keine Veränderung. Im Urin kein Zucker, kein Eiweiss. Blutbefund normal.

Der Kranken wurde Jodkali in steigenden Dosen verordnet. Sie erhielt am ersten Tage 1 Esslöffel einer Lösung (Kal. jodat. 10.00, Aq. dest. 200.00) und jeden dritten Tag um einen Esslöffel mehr, bis zu 8 Esslöffel pro die. Sie vertrug diese grossen Jodkalidosen ohne Beschwerden. Im Verlaufe dieser Therapie besserte sich die Nasenaffektion zusehends. Schon nach 14 Tagen war die Rötung nur mehr ausschliesslich auf Nasenspitze und einen Teil der Nasenflügel beschränkt, die Geschwürchen waren zum grossen Teile überhäutet, viele

Knötchen verschwunden. Im Inhalt der Knötchen fanden sich wohl noch Blastomyzeten, doch hatten diese an Zahl bedeutend abgenommen. Auch ihre Färbbarkeit war geringer geworden, indem sich viele als schwach blassblau gefärbte Scheiben mit dunkler blau gefärbten Kontur repräsentierten. Patientin wurde schliesslich geheilt entlassen, nachdem alle Erscheinungen bis auf Rötung der Nasenspitze geschwunden waren.

*Die histologischen Veränderungen* sind dreierlei Art. Sie betreffen erstens den Bestand von kleinen Abszessen, teils subepidermoidal, teils intrakorneal, zweitens Epithelwucherungen gegen die Kutis zu und drittens Zellinfiltrate in der Kutis und Subkutis.

Was die Abszesse betrifft, so fanden sich unter dem Stratum corneum Anhäufungen von polynuklearen Leukozyten, zwischen denen man zahlreiche Blastomyzeten in allen Stadium der Sprossung und des Wachstums findet. (Auch in dem Falle hat sich die Waelsch'sche Modifikation der Weigert'schen Fibrinfärbung zur Darstellung der Mikro-organismen in der Hornschicht, nämlich Färbung durch 15 Minuten in Anilinwasser, zwei Teile Gentianaviolett, alkoholische Lösung ein Teil, dann Behandlung der Präparate drei Minuten lang mit einer Mischung von 5% Jodkalilösung mit Wasserstoffsuperoxyd zu gleichen Teilen, dann Eintragen der Schnitte in salzsaures Anilinöl durch etwa fünf Stunden, schliesslich Xylolbalsam bewährt.) Mit dieser Methode gelang es, die hefeähnlichen Gebilde elektiv zu färben. Innerhalb des Stratum Malpighii waren nur vereinzelt solche Herde von Leukozyten mit Blastomyzeten anzutreffen. Die subkornealen Abszesse entsprachen den eigentümlichen, durchscheinenden Knötchen des klinischen Bildes.

Die Epithelwucherung trat an manchen Stellen als Verbreiterung der Malpighischen Schicht in die Erscheinung, anderen Stellen als bedeutende Entwicklung der Epithelzapfen, die weit in die Tiefe der Kutis hineinreichten und sich vielfach verzweigten. Leukozyten waren nur vereinzelt im Epithel sichtbar.

Die Zellinfiltrate der Kutis waren aus Rund-, Epitheloid- und zahlreichen Riesenzellen zusammengesetzt und erinnerten ganz an das Bild eines Lupus vulgaris. Es gelang jadoch

[illegible]

[illegible] Nase [illegible] he beiderseits ist die Krustenauflagerung [illegible] d die Infiltrate gewulstet. Im Bereiche

dieser Infiltrationen finden sich zahlreiche seichte deprimierte Narben, welche gelb gesprenkelt erscheinen. Stellenweise sind die Ausführungsgänge der Talgdrüsen, wie bei Lupus erythematosus erweitert. In der Umbegung der Nasenflügel finden sich papilläre Exkreszenzen, sowie einige akneartige, weiche Knötchen. Symmetrisch zu beiden Seiten des Nasenrückens und der Nasenflügel finden sich lebhaft hellrote, nur wenig elevierte und infiltrierte, von feinen Gefässen durchzogene, stellenweise mit fettigen Krusten bedeckte, etwa guldengrosse Herde, welche zu beiden Seiten der Nase und an den oberen Partien der Wange ein blasses, narbiges Gebiet umgeben. Nach abwärts gegen die Oberlippe zu sind diese Herde ausgedehnter, ohne narbiges Zentrum, nur links ist die zentrale Narbenbildung angedeutet. Sonst sehen diese Flächen wie die augenwärts gelegenen Umgrenzungsbänder aus, hellrot, wenig eleviert und infiltriert, von zahlreichen Gefässchen durchzogen. Die Grenzen gegen die gesunde Wangenhaut sind unscharf; nach abwärts gehen diese Plaques beiderseits direkt in die diffus geschwollene, fast dreifach verdickte Oberlippe über.

Diese ist in toto diffus düster gerötet, die Rötung scharf nach links und rechts gegen den noch behaarten Teil der Oberlippe abgegrenzt, mit dicken, gelben Krusten bedeckt nach deren Ablösung ein leicht blutendes, nässendes, glattes Gewebe zum Vorschein kommt.

Die Schleimhaut der Mundhöhle ist frei. Das Nasenseptum vom Übergang des knöchernen zum knorpeligen Anteil sowohl nach oben als nach unten perforiert; die Perforationsöffnung von narbigen Rändern umgeben.

Patient bekam bis zum 28. September 335 g Jodnatrium und wurde mit folgendem Status entlassen: An der Oberlippe ist noch eine ganz geringe Verdickung bemerkbar, die Haut derselben ist von feingestrickter blasser Narbe eingenommen. Die Haut der Nase und der seitlichen Wangenpartien blass, zum Teil, namentlich in den seitlichen Partien eingenommen von länglichen, feinen Narben, welche von einem wenig erhabenen, rötlich gefärbten Saum umgeben sind. Die rötliche Farbe des Saumes ist auf kleine Gefässektasien zurückzuführen. In diesen Rändern, sowie in der Haut der Narbe ;, auch an der Nasenspitze finden sich massenhaft bis

stecknadelkopfgrosse, hellgelb hindurchschimmernde, milienartige Gebilde. An der Nase rechts und in der Nasolabialfurche links zwei linsengrosse derbe Atherome von braungelber Farbe.

Im Sekrete und in den Krusten, sowie im Inhalte der milienähnlichen Gebilde Blastomyzeten zum Teil in Sprossung begriffen. Kulturversuche auf den verschiedensten Medien, sowie Tierinokulationen waren negativ.

Durch Inokulation mit dem Sekrete am rechten Oberarm gelang es, nach 24 Stunden eine kleine Blase zu erzeugen, in deren Inhalt Blastomyzeten nachweisbar waren; nach zwei Tagen war die Blase spurlos abgeheilt.

*Der histologische Befund* zeigte insoferne eine Differenz von den drei anderen Fällen, als die intra-epidermoidale und intrakorneale Pustelbildung, die miliaren Abszesschen vollständig fehlten. Es fand sich nur ein mächtiges Infiltrat im Stratum papillare und reticulare, das aus Rund-, Plasma- und Riesenzellen bestand.

In diesem Infiltrate fanden sich teils vereinzelt, teils zu 5–8 gruppiert Blastomyzeten in charakteristischen Formen. Es gelang auch, diese in Gefässen der Kutis nachzuweisen (Färbung, Gram-Weigert und Waelsch). Die Wucherungsvorgänge am Epithel waren geringe; es fanden sich nur spärlich verbreiterte und verlängerte Epithelzapfen. Die gelben Punkte der Narben waren durch erweiterte und vergrösserte Talgdrüsen hervorgerufen.

Fassen wir die klinischen und histologischen Eigenheiten dieser vier Fälle zusammen, so ergibt sich für uns folgendes:

Das klinische wie das histologische Bild bildet das Resultat *akuter und chronischer Hautveränderungen.*

*Die akuten klinischen Symptome sind: allmählich gegen die Umgebung abklingende helle Rötung und Schwellung mit oberflächlicher Pustelbildung. Die Pusteln haben einen ganz eigenen Typus. Sie gleichen gelben und roten Knötchen von sehr weicher Konsistenz und durchscheinendem Inhalt, der sich als dicklich und fadenziehend erweist. Nach Zerfall der Pusteln entstehen seichte, unregelmässig begrenzte, lebhaft sezernierende Geschwüre, die mit zarten Narben ausheilen. Die Narben haben ein gelbgesprenkeltes Aussehen.*

*Histologisch entspricht diesem Stadium das Vorhandensein von intrakornealer und intraepithelialer Abszessbildung; zwischen Epidermis und Kutis wurde nie ein Abszess beobachtet. Die Epidermiszapfen sind meistens verbreitert und verlängert, das Stratum papillare entzündlich infiltriert. In den Abszessen und Infiltraten Blastomyzeten vereinzelt oder in Gruppen, aber nie zahlreich.*

Dieses akutere Stadium der Krankheit gibt bei längerem Bestande ein Bild, das die meisten Fälle zeigen und das dem Lupus verrucosus ähnlich wird (Gilchrist beschrieb seinen ersten Fall als "*Pseudolupus verrucosus*"). Man sieht dann *wallartige oder gewulstete Infiltrate, blasse narbige Zonen umgebend, Verdickungen der Nase und Lippen, die oberflächlich exkoriiert und mit Krusten bedeckt sind, tiefe Geschwüre mit unregelmässigen Randern und unebenem, mit dicken Borken bedecktem Grunde, die manchmal den Nasenflügel konsumieren und das Septum der Nase perforieren. Auf der Basis dieser Geschwüre kommt es zur Bildung papillärer Exkreszenzen, die bald die Rander der Geschwüre überragen, dicht angeordnet sind und stellenweise an den Spitzen Verhornung zeigen.*

Histologisch finden sich, abgesehen von Veränderungen der Epidermis, die analog den früher geschilderten sind, *dichte Infiltrationen mit Rund-, Plasma- und Riesenzellen. Die Infiltrate durchsetzen alle Schichten der Kutis und gehen noch in die Subkutis hinein. Dieses Infiltrat zeigt teils Neigung zum eitrigen Zerfall, teils zur Narbenbildung; in ihm findet man spärlich die Blastomyzeten.*

Alle diese klinischen und histologischen Charaktere sehen wir in den vier Fällen in verschiedener Intensität und Kombination.

Allen gemeinsam ist das Befallensein der Nase und die längere Dauer des Prozesses. Der Fall, der die kürzeste Krankheitsdauer hatte (Fall 2 Brandweiner), zeigt mehr das akute Stadium, die eigenartige Pustelbildung, die helle, allmählich abklingende Rötung, die seichte Geschwürs- und zarte Narbenbildung, die anderen Fällen entsprechend ihrer Dauer auch die Kombination der Symptome.

Fall 3, Dauer der Affektion 2 Jahre, durchscheinende Knötchen, seichte Geschwüre, zahlreiche Narben und geringe

Verdickung der Nase; Fall 4, Dauer der Affektion 3 Jahre, neben hellen, von Gefässen durchzogenen Rötungen und von diesen begrenzten Narben, Infiltrationen der Nase und Oberlippe, papilläre Wucherungen und Perforation des Nasenseptums; endlich Fall 1, der die längste Krankheitsdauer hatte (14 Jahre), Knötchen, Infiltrationen, Zerstörung des Nasenseptums, des einen Nasenflügels und zahlreiche verrukōse Wucherungen.

Gemeinsam war auch allen 4 Fällen der eklatante Erfolg der Jodtherapie.

Was die Differentialdiagnose betrifft, so kommen in erster Linie in Betracht Lupus vulgaris und hypertrophicus papillaris, Tuberculosis verrucosa, Syphilis und Epitheliom, in zweiter Linie Lupus erythematosus und Acne vulgaris faciei. Gegen Lupus vulgaris und papillaris hypertrophicus sprechen die hellrote Farbe, die unscharfe Begrenzung, die Perforation des Nasenseptums und die eigentümliche Beschaffenheit der Pustelknötchen; gegen Tuberculosis verrucosa die grosse Ausbreitung der Affektion, die Weichheit der papillären Wucherungen und die tiefen Geschwüre. Von Syphilis unterschied sich die Affektion durch die unregelmässige, unscharfe Begrenzung, die hellrote Farbe, die Unregelmässigkeit der Substanzverluste, die Zartheit der Narben; vom Epitheliom durch die Weichheit der Geschwürsränder und papillären Exkreszenzen, die Kombination des ulzerösen Prozesses mit den eigenartigen transparenten Knötchen.

Vom Lupus erythematosus ist die Blastomykose durch die tiefen Ulzerationen, die Perforation des Nasenseptums, die gelblichroten Knötchen, die unscharfe Begrenzung und von der Acne confluens faciei, die nur wegen der manchmal den Aknepusteln ähnlichen Knötchen im Anfangsstadium der Krankheit in Betracht käme, durch die diffusen, hellen Rötungen und durch alle übrigen, den weiteren Verlauf der Affektion charakterisierenden Symptome zu unterscheiden.

Sehr gestützt wird selbstverständlich bei dem nach der Dauer des Leidens sehr wechselnden Krankheitsbilde erst dann die Diagnose, wenn in den Sekreten, Borken und im Inhalte der Knötchen Blastomyzeten reichlich und in Sprossformen konstant zu finden sind und das histologische

Präparat deren Anwesenheit nicht nur an der Oberfläche der Haut und in Ansammlungen polynuklearer Leukozyten der Epidermis ergibt, sondern auch in den Infiltraten der Kutis und Subkutis.

Freilich ist auch dann noch immer nicht die Blastomyzetennatur der Erreger dieser Krankheit und deren Sonderstellung über jeden Zweifel erhaben, solange nicht Reinkultur, Tierexperiment und Inokulation auf den Menschen gelungen sind, wie dies ja auch in unseren Fällen nicht gelang. Aber auch in etwa 20 Fällen, die in Amerika beobachtet wurden, darunter auch Fälle von Gilchrist, waren diese Postulate nicht erfüllt.

Wir glauben daher zur Annahme berechtigt zu sein, dass man Fälle, wie die vier hier beschriebenen, deren eigenartiges klinisches Bild von Neumann und Finger anerkannt wurde, bei denen man an der Oberfläche und in der Tiefe des Gewebes hefenähnliche Gebilde konstant und elektiv nachweisen kann, trotz des negativen Ausfalls der Kultur- und Impfversuche als wahrscheinlich durch Blastomyzeten verursacht hinstellen und sie mit dem Namen *Hautblastomykose* bezeichnen kann.

Über die Frage des Beginnes der Affektion teilen wir die Ansicht Buschkes, dass die Hefen von aussen her in die Haut eindringen, im Gegensatz zur Ansicht Busses. Der klinische Aspekt der Fälle erklärt dies auch ungezwungen. Es sind entweder Blastomyzeten, die zuerst als harmlose Schmarotzer in den Epidermislamellen oder in den Mündungen der Talgdrüsen lebten und dann sei es durch günstigen Nährboden, sei es durch Änderung ihrer Eigenschaften pathogen werden, oder es sind von vornherein virulente Sprosspilze. Die kleinen Ansammlungen polynuklearer Leukozyten, die bald in der Hornschicht, bald unter dieser, bald im Rete Malpighii liegen und Blastomyzeten enthalten, kennzeichnen den Weg, den diese nehmen. Dies sind die miliaren Abszesschen nach der amerikanischen Beschreibung. Werden diese grösser, so bilden sie die vielfach erwähnten transparenten, glänzenden, gelbroten Knötchen. Haben die Blastomyzeten die Epidermis durchsetzt, so erzeugen sie im Kutisgewebe genau so wie die Tuberkelbazillen ein Rund-, Plasma- und Riesenzellen enthaltendes Granulationsgewebe. Von hier aus können sie in die Blutbahn gelangen und unter Umständen eine

allgemeine, pyämieähnliche Infektion mit Hefepilzen erzeugen (Fälle von Busse-Buschke, Montgomery-Walker, Ormsby-Miller, Ophüls-Moffit, Montgomery).

Dass die von uns im Sekrete und Gewebe nachgewiesenen Gebilde Blastomyzeten seien, wird von Unna und Neuberger bestritten. Unna behauptet nämlich einerseits, es könne sich um Degenerationsprodukte des Elastins handeln, anderseits käme auch der Flaschenbazillus in Betracht. Dem gegenüber müssen wir festhalten, dass diese sich nach Gram-Weigert und Waelsch tief blaufärbenden Körper an Orten zu finden sind, wo nie elastisches Gewebe zugrunde gegangen ist wie im Rete, dass sie sich mit basischen Farbstoffen ebensogut färben lassen wie mit sauren (Fuchsin) und dass die Formen doch viel zu regelmässig und eindeutig sind, als dass man diese für die wechselnden Degenerationsprodukte der elastischen Fasern halten könnte.

Gegen die Flaschenbazillennatur, die auch von Neuberger geltend gemacht wurde, sprechen die intensive Färbbarkeit und die deutlichen Sprossformen.

Praktisch ergibt sich aus der Beobachtung dieser Fälle, deren Zahl gewiss in der nächsten Zeit zunehmen wird, dass wir in allen Fällen, in denen wir zu keiner definitiven Diagnose kommen können, weil sich eine Affektion nicht unter die bereits bekannten klinischen Bilder namentlich des Lupus, der Syphilis und des Epithelioms einreihen lässt, zum Mikroskope greifen müssen, das erst die Sonderstellung eines solchen Falles wahrscheinlich macht. Dann wissen wir aber auch, dass wir in grossen Joddosen ein Mittel haben, um der Blastomyzeteninfektion der Haut wirksam zu begegnen.

# SYSTEMIC BLASTOMYCOSIS: ITS ETIOLOGICAL, PATHOLOGICAL, AND CLINICAL FEATURES, AS ESTABLISHED BY A CRITICAL SURVEY AND SUMMARY OF TWENTY-TWO CASES (EIGHT OF THEM UNPUBLISHED); THE RELATION OF BLASTOMYCOSIS TO COCCIDIOIDAL GRANULOMA

By Dr. Frank Hugh Montgomery and Dr. Oliver S. Ormsby, of Chicago

Since Gilchrist in America and Busse and Buschke in Germany first described the infectious disease now generally known as blastomycosis, about one hundred cases involving the skin have been recognized, chiefly in Chicago and its vicinity, but also in other parts of the United States, in Canada, in various parts of Europe, in Japan, India, and South America. In consequence, cutaneous blastomycosis is generally accepted by dermatologists and pathologists throughout the world as a distinct clinical and pathological entity.[1]

It is not, however, so generally understood that deeper-seated infection with these same organisms may result in grave and usually fatal systemic disease. The purpose of this paper is to call attention to a number of recorded and unrecorded cases of systemic blastomycosis and to summarize and classify, in so far as is now possible, the etiological, pathological, and clinical features of the disorder. We have

[1] (For a general discussion of cutaneous blastomycosis see a paper by one of us (Montgomery), *Journ. Amer. Med. Assn.*, June 7, 1902. This gives a summary of the clinical, pathological, and bacteriological features of the disease, with sixteen clinical illustrations and twenty-five illustrations of the histology and bacteriology; a briefer summary in Hyde and Montgomery's *Diseases of the Skin*, 7th ed.; a general summary by Gilchrist, *Brit. Med. Journ.*, 1902, p. 1321; and original reports of many cases since January, 1900, in *Journ. Cutan. Dis.*, and other journals.)

collected twenty-two cases (eight not yet published),[1] in which the diagnosis of systemic blastomycosis has been demonstrated beyond question by histological and bacteriological study of the lesions, and in eleven instances by autopsy. In addition to the twenty-two unquestionable cases on which this paper is based, we have added brief notes of five other cases in which blastomycetes were demonstrated in local lesions or in the sputum, and in which all clinical signs pointed to systemic infection, but in which the final proof of such infection is wanting.

History and Geographical Distribution.—The cases in the appended summary are arranged in order of publication. Busse and Buschke's case of cutaneous and systemic blastomycosis was first reported by Busse in 1894, a few weeks after Gilchrist had demonstrated before the American Dermatological Association his sections from a cutaneous lesion. The Curtis case was published in 1896. The first American case of systemic blastomycosis (No. 3) was under observation in 1894–5, but its true nature was not discovered until five years later, through examination of the sections and tissue which had been preserved. Sixteen of the cases herewith tabulated have been recorded within the last two years.

The residences of the twenty-two patients at the time of acquiring the disease were, as nearly as can be determined, as follows: Chicago, thirteen; Iowa, two; Indiana, Wisconsin, Ohio, Maryland, New York City, Germany, and France, one each. The Wisconsin patient probably acquired his disease while working in one of the southern states. The true nature of the Indiana, Wisconsin, and Ohio cases was discovered when the patients were in Chicago for examination and treatment. Though it is evident that blastomycosis, both cutaneous and systemic, occurs most frequently in Chicago and its vicinity, it is probable that one reason why so many reports come from this city lies in the fact that a number of Chicago physicians have become familiar with the disorder and are on the lookout for it.

[1] Four of these will be published in full later by some of our Chicago colleagues who have kindly permitted us to make abstracts from their notes.

ETIOLOGY.—*Predisposing causes*, aside from those which favor any infection, cannot be recognized in the study of the twenty-two cases. Family and personal histories are in the main negative. There is no evidence of inheritance, or contagion, though in one of the doubtful cases (E) there were two and possibly three, individuals of the same family with lesions showing infection with blastomycetes. Of the twenty-two patients nineteen were males and three females. The ages varied from 17 to 58, seventeen being between 20 and 47, the period, usually, of greatest activity and consequently of most frequent exposure to infections. The occupation of sixteen of the nineteen men is given as follows: Laborers, seven; farmers, three; machinists, two; engineer, carpenter, policeman, and convict, each one. Of the three women, one was employed on a farm, one was a German housewife, the other was a young married woman with no occupation. The hygienic surroundings and financial condition of the patients were unfavorable in the majority of cases.

The *active and essential cause* of the disease is infection with organisms which for the want of a more exact and satisfactory term are designated as blastomycetes. That these organisms are the pathological factors in these cases has been clearly demonstrated: (1) by finding the organisms in pus and tissue; (2) by obtaining them in pure culture from subcutaneous abscesses, and at autopsies from miliary nodules and abscesses of internal organs; (3) by reproduction of the disease in guinea-pigs and other animals after inoculation with pure cultures, and recovery of the organism in pure cultures from the generally disseminated lesions in these animals. (See Cases 1, 2, 4, 5, 8, 9, 14, and 18.) The organisms are pyogenic and are readily obtained in pure culture from any of the unbroken abscesses.

Tuberculosis has been excluded from all the cases by examination of secretions and tissues. In Cases 1, 2, 3, 5, 7, 8, 9, 12, 14, and 18, a thorough search was made for any possible complicating tuberculosis, not only by examination of secretions and tissues but also by the inoculation of guinea-pigs, while in Cases 5, 7, and 14 the tuberculin test and cultures were also employed. Only in Case 11, in which late in the

disease tubercle bacilli were found in the sputum, was any such complication detected. It is true that in Case 3, after prolonged search three or four bacilli with staining qualities like those of tubercle bacilli were demonstrated in a small open ulcer of the skin, but the exact nature of these bacilli was not demonstrated, and they were undoubtedly present as the result of secondary infection, since tissue from these same lesions inoculated into several guinea-pigs failed to produce tuberculosis.

*Infection Atrium and Mode of Dissemination.*—At each of the eleven autopsies the lungs were found to be more or less extensively involved; in several instances with bronchopneumonia. In a number of cases the earliest symptoms were pulmonary, and blastomycetes were demonstrated in the sputum. These facts would point to the respiratory tract as a common point of infection through the inhalation of particles of dust carrying the organisms. In Cases 3 and 4, typical cutaneous lesions had existed for seven and four years, respectively, before systemic infection occurred. In Case 12, there is a history of a wound of the foot, with the first manifestations of the disease appearing in the adjacent tissues. In the majority of the cases, however, and especially in those in which the first symptoms were indolent subcutaneous abscesses, the point of inoculation cannot be determined.

That the *mode of extension* is the same as in other pyæmias, through the blood instead of by way of the lymphatics, is evident from the wide and often rapid dissemination of deep-seated lesions with little or no involvement of the lymph glands, and from the fact that blastomycetes have been demonstrated in the blood in Cases 1 and 19, and in sections of blood vessels in a number of instances. Enlarged lymph glands were noted clinically in Cases 1, 4, 5, 7, and 19, and at the autopsy in Cases 1, 7, 8, 14, 19, and 20, but in no instance was the involvement of lymph glands a prominent feature.

The *organisms* are apparently identical with those found in cutaneous blastomycosis and as these have been described fully and repeatedly, the subject will be considered very briefly here. In unstained preparations of pus and tissue, the organisms appear as round or oval bodies with a double-

contoured, highly refractive capsule. Within the capsule in many instances granules, or spore-like bodies, can be distinguished. The addition of a one to ten per cent. solution of potassium hydrate to the specimen under examination facilitates the recognition of these bodies. In stained sections the double-contoured, homogeneous capsule is usually separated from a finely or coarsely granular protoplasm by a clear space of varying width. Vacuoles of different sizes are found in some organisms. In both pus and tissue, organisms in pairs or in various stages of budding are commonly seen. The parasite varies in size, as a rule, from seven to twenty microns, though slightly smaller and much larger forms occur in some cases.

The organisms are readily obtained in pure culture from unbroken abscesses, from miliary abscesses in the borders of the cutaneous lesions, and from the miliary nodules and abscesses in the deep-seated organs. Cultures were obtained in all the cases here reported except 3 and 6, in which the nature of the disease was discovered by histological examination of tissues after death. The parasites grow well on glycerine- and glucose-agar, blood serum, broth, and other ordinary culture media. A macroscopical growth is usually seen in from two to fourteen days; in sub-cultures from thirty hours to fourteen or more days. The gross and microscopic forms of the organism in any one case may be made to vary widely with the media employed and with the temperature and other conditions of growth. As a rule, the growth is more or less moist on glycerine-agar, but dry and showing abundant aërial hyphæ on glucose-agar. At room temperature there is a greater tendency on all media to a drier growth and a greater development of aërial hyphæ than in the incubator, where the growth is commonly more moist and pasty. Moist growths on glucose-agar taken from the incubator and grown at room temperature become dry and develop abundant aërial hyphæ. Old cultures on glycerine-agar usually form a rough, granular, or angle-worm appearance of a light brown color.

Microscopically, room-temperature cultures appear at first as a fine branching mycelium with a few small, spore-like bodies. Later, a large, segmented, often pod-like mycelium

appears, together with large, round, or oval bodies with bud-like projections. Many small spore-like bodies are frequently seen within the larger mycelium and large round bodies, or in groups near a ruptured capsule, but the development of these small bodies into adult forms has not been demonstrated. Cultures grown in the incubator usually show at first budding forms apparently identical with those seen in tissue and in pus.

The cultural features of the organisms as reported by different observers in different cases have varied considerably. It does not follow, however, that the parasites varied so much as the reports would imply, for with the organism from a single case we have produced practically all the morphological varieties previously described by ourselves and others. The futility of any attempt to form a classification based on morphology alone is thus apparent. The number and varieties of pathogenic fungi of this group can be determined only by a comparative study of them all on uniform lines and with absolutely the same technique.[1] As it has been demonstrated that there are a number of yeasts pathogenic for animals, and as Hanson has shown that yeasts rarely occur singly in nature but rather in groups of two or more, it is quite possible that in the majority of cases of blastomycosis there may be present two or three varieties of a given species. Such an hypothesis would explain some of the cultural and other phenomena we have observed.

Pathology.—Aside from the marked tendency to pus formation, the gross pathology of systemic blastomycosis so closely resembles that of tuberculosis that in some of the earlier autopsies the presence of large numbers of minute nodules in different organs led to a macroscopic diagnosis of miliary tuberculosis. The formation of multiple abscesses (especially subcutaneous abscesses), with the resulting sinuses, ulcers, and scars, is, however, one of the characteristic features of the disorder. These abscesses may be microscopic in size or they may be large enough to hold a litre of pus. They may burrow deeply, involving the muscles, laying bare the

[1] This has been done with the organisms of four cases, by Hamburger, *Journ. Infect. Dis.*, 1907, iv., p. 201.

tendons, causing erosion and caries of bones, and invading the joints, or their origin may be in deeper tissues producing large thoracic, abdominal, or pelvic abscesses. Multiple miliary to pea-sized and larger abscesses may occur in any or all of the organs of the body, but are especially common in the lungs and spleen, which in some instances were completely riddled and largely destroyed. In several instances vertebræ, and in one case several inches of the spinal cord, were completely destroyed. The bone involvement may occur as a blastomycotic osteomyelitis as shown in Case 19.

The histological appearances also strongly suggest those of tuberculosis, but again differ from it especially in the abscess formation and in the presence in the nodules of greater numbers of polymorphonuclear leucocytes. A small nodule in the lung which closely resembles in appearance a miliary tubercle is seen to have the following component parts: In its centre is a necrotic mass surrounded by giant cells, outside of which is a zone of granulation tissue. The necrotic centre contains blastomycetes, polymorphonuclear leucocytes, red blood corpuscles, and desquamated epithelial cells. Surrounding this mass are varying numbers of giant cells of the Langhans type and embryonic connective tissue cells. The giant cells nearly all contain blastomycetes in varying numbers, sometimes being crowded full of them. Outside of this area are found plasma and small round cells, some connective tissue fibres, and distended capillaries. In these areas the alveolar walls are often not demonstrable and in the bronchioles desquamated epithelial cells, blastomycetes, cellular detritus, and pigment are found. In some sections all that remains to show the former presence of bronchioles is the deposit of peribronchial coal dust. At a distance from the blastomycotic bronchopneumonic process, œdema of the lung tissue occurs. In cases where greater destruction has ensued as a result of more active multiplication of the organisms, the identity of the lung tissue is practically lost, its place being occupied by great numbers of the parasites, giant and other cells peculiar to the granulomata, cellular detritus, and large amounts of pigment. The peribronchial lymph nodes contain blastomycotic nodules similar to those described above, sections of which show less

advanced areas of necrosis surrounded by granulation tissue. The giant cells at times contain pigment as well as the usual organisms.

The smaller areas in the spleen, kidneys, pancreas, adrenals, etc., show as a rule collections of blastomycetes and necrotic tissue, the necrosis being less marked than in the lungs and giant cells less frequent. No giant cells have as yet been seen in the spleen. In bones necrotic areas containing the organism in abundance, surrounded by leucocytes, giant cells, and other cells peculiar to the granulomata, have been noted in several instances and fully described in Case 8.

In the deeper abscesses (retropharyngeal, deep subcutaneous, etc.), sections from the lining of the abscess cavities show necrotic tissue, blastomycetes, and leucocytes, chiefly polynuclear, surrounded by giant cells and small round cells and fibroblasts, the giant cells containing blastomycetes.

Sections from a deep unruptured nodule in the skin showed its metastatic origin. It was a beginning abscess situated chiefly in the hypoderm, the overlying epidermis being unaltered. The upper part of the corium showed little change, while in the lower part some œdema and moderate degeneration of the collagen was present. In the hypoderm the nodule presented in its centre blastomycetes, in groups, in pairs and singly, polymorphonuclear leucocytes, and red blood cells. Surrounding this were numerous giant cells of the Langhans type, plasma and connective tissue cells. At the margins were some fibroblasts. The giant cells here all contained the organisms.

While as a rule there appears to be a certain amount of uniformity in the arrangement of the component parts of this granuloma in different parts of the body, many sections show no such arrangement, but rather an indefinite commingling of the various cells with the blastomycetes. Ordinary fixing and staining methods suffice to demonstrate the organisms, which are found both within the giant cells and free. Hematoxylin-eosin, polychrome methylene blue, and Loeffler's alkaline methylene blue are most commonly employed. Metachromism is at times shown in the granules in the organisms when metachromatic stains are employed.

It is worthy of note that notwithstanding the presence of suppuration in all of the cases, in three only (5, 6, and 8) was amyloid degeneration recognized, and in only one instance (Case 8) were these changes at all extensive. In this case amyloid was noted in the spleen, liver, kidneys, adrenals, retroperitoneal and mediastinal lymph nodes, and colon.

In ten[1] cases of which full autopsy reports are available, lesions distinctly blastomycotic in character were demonstrated in the following organs and tissues: lungs, in all cases; pleura, in Cases 5, 7, 19, and 20; larynx, in Case 5; trachea and bronchi, in Cases 5, 7, and 8; thyroid cartilage, in Case 9; retropharyngeal and subpleural tissues, in Case 7; myocardium, in Case 6; cerebrum and cerebellum, in Cases 7 and 19; spinal cord, in Case 18; external spinal dura, in Case 7; spleen, in Cases 1, 3, 5, 6, 9, 14, 19, and 20; liver, in Cases 3, 5, 6, and 7; kidney, in Cases 1, 3, 5, 6, 7, 9, 19, and 20; adrenals, in Case 6; pancreas, in Case 5; colon in Case 7; appendix vermiformis, in Case 14; prostate, in Cases 19 and 20; psoas and other deep abscesses, in Cases 8, 9, and 14; bones, not including spinal column, in Cases 1, 7, 8, 9, 19, and 20; spinal column, in Cases 7, 8, 18, and 19; joints, in Cases 7, 18, and 19; lymph nodes, in Cases 7, 8, 14, 19, and 20; muscles in Cases 19 and 20. Cultures of the blastomycetes were obtained from the pericardial and pleural cavities in Case 20; from the blood, in Cases 1 and 19; organisms were demonstrated in sections of blood-vessels in Cases 5, 8, and 9.

The blastomycotic nature of the subcutaneous abscesses was demonstrated in each case by cultures or examination of smears. The histology of a subcutaneous nodule is described in detail in Case 5. Sections of many of the cutaneous ulcers were made showing the characteristic features of cutaneous blastomycosis.

Among other morbid conditions noted at autopsy in these various cases were the following: laryngitis, adenoma of the thyroid, colloid goitre, fibrous and sero-fibrinous pleuritis,

[1] Regarding one of the eleven autopsies (Case 18), we have only Dr. Evans's verbal statement that blastomycotic lesions were distributed generally throughout the body and that several vertebræ and a portion of the spinal cord were destroyed.

purulent bronchitis, broncho-pneumonia, pulmonary œdema, fibroid induration of the lungs, pericarditis, atrophy of the heart, perihepatitis, parenchymatous degeneration, fatty changes; adenoma, angioma, and atrophy of the liver; nephritis, retention cysts of the kidney, hyperplastic splenitis, atrophy of the testicles, and tigrolysis of ganglion cells of the cerebral cortex and ventral horns of the cord.

*Animal experiments* have demonstrated the pathogenicity of blastomycetes for guinea-pigs, white mice, rats, rabbits, and dogs. The inoculations were far from uniformly successful, many animals showing little or no reaction and on those that were successful a very large dosage was required. The best results followed intraperitoneal and intravenous injections of pure cultures, and were most marked in those animals killed about three weeks after inoculation. Several guinea-pigs in which a general systemic infection was indicated by irregular fever, lasting a number of weeks, by loss of weight, and even by the formation of palpable abdominal tumors, eventually made a complete recovery, showing their ability to overcome the disease. Local lesions induced by subcutaneous inoculation usually healed in a few weeks. The gross and microscopic findings in animals were similar to those found in man. In the various animals the following structures showed blastomycotic ulcers, nodules, miliary tubercles, and abscesses: The skin, subcutaneous tissue, lungs, pleura, diaphragm, liver, spleen, kidneys, mesentery, omentum, testicles; mediastinal, mesenteric, and inguinal lymph glands; and in one instance the placenta. The involvement to a marked degree of the testicles after intra-peritoneal inoculation corresponds to results obtained with the organisms of coccidioidal granuloma after similar inoculations.

Clinical Features.—The common and most pronounced feature of all the cases (except Case 6 in which there was but one abscess) has been the formation sooner or later of multiple abscesses in various parts of the body, with the accompanying symptoms of a chronic pyæmia in the form of an irregular moderate fever, malaise, loss of strength, and emaciation. In addition many of the cases have presented symptoms due to the location of the disease in certain definite organs as the

lungs or kidneys. In such instances the symptoms closely resemble those of tuberculosis of the same organs, except that the symptoms and clinical signs appear to be even less pronounced than in tuberculous changes of equal extent and severity.

*Onset, Course, and General Symptoms.*—In nine cases (1, 2, 3, 4, 9, 12, 13, 17, and 21) subcutaneous abscesses or local ulcers were the first definitely recognized manifestations of the disorder, and were followed in the course of days or weeks by the development of general symptoms. Evidences of systemic disturbance preceded the appearance of local lesions for periods varying from a few days to a month in five cases (3, 10, 11, 16, and 19), and from three to six months in seven cases (5, 7, 8, 14, 15, 20, and 22). In Case 6, the patient died after about six months of a systemic disorder pointing to involvement of the lungs and intestines and with the development of but a single abscess.

The general symptoms may be ushered in by acute febrile disturbances (as in Cases 3, 10, and 11); by symptoms of a "cold" (as in Cases 5, 6, and 19); by tonsillitis and pneumonia (in Case 15). In fourteen cases the general symptoms were gradual and insidious in their development. In Case 3 there were repeated attacks of an acute febrile condition resembling pneumonia, followed in a few days by the appearance of subcutaneous nodes and abscesses. In several other cases, similar though less pronounced febrile reactions preceded the appearance of each new crop of abscesses.

The course of the disease is essentially chronic, though moderately acute exacerbations and remissions may occur. In every case except No. 4, in which the disorder was recognized early and the patient promptly recovered, gradually increasing loss of strength, with emaciation, has been recorded, together with an irregular temperature ranging from normal or subnormal to 101° or 103°. Night sweats and œdema were features in a number of cases. Death has resulted usually from gradual exhaustion due to the chronic pyæmia or to the general dissemination of the disease through various organs and tissues of the body. In a few instances a fatal termination has been hastened by the rapid and extensive destruction of

tissue in the lungs (as in Cases 3 and 5), or in the lungs and other organs (as in Cases 6, 19, and 20). The duration of the disease, aside from Case 4, which apparently recovered in about six weeks, varied from four to six months in four cases (6, 12, 19, and 20); from six months to a year in three cases (3, 5, and 9); and from one to two and one-half years in thirteen cases.

Pulmonary symptoms have been present in many of the cases but have almost invariably been mild during the early part of the disease and limited usually to cough with expectoration or a feeling of discomfort in the chest. In a few cases (as in 3, 5, 7, 9, and 19), as the disease progressed these symptoms became much more pronounced, with blood-stained sputum. Physical findings have not pointed to extensive involvement of the lungs except in a few cases (9, 19, and 20) toward the end. With one or two exceptions the changes found in the lungs at the autopsy were much greater than were indicated by the symptoms and physical signs. Blastomycetes were demonstrated in the sputum in Cases 7, 8, 9, 12, 19, and 21. Laryngitis, with hoarseness or aphonia, was a persistent symptom in Case 5, and to a lesser degree in two or three other cases.

Gastro-intestinal symptoms were noted, chiefly in the form of diarrhœa, in Cases 6, 7, 8, 12, and 14. Blastomycetes were demonstrated in the fæces in Cases 7 and 12. Symptoms of nephritis, with albumen and casts in the urine, were recorded in Cases 6, 7, 8, 9, and 19. Blastomycetes were demonstrated in the urine (from the prostate) in Case 19.

Where blood examination is mentioned, more or less leucocytosis is recorded (in Cases 7, 8, 9, 13, 14, 16, 19, and 21). Anæmia was noted in Cases 5, 8, 16, and 19. Blastomycetes were obtained in culture from the blood in Cases 1 and 19 (they were demonstrated in sections of blood-vessels in Cases 5, 8, and 9). Some enlargement of the spleen was noted in Cases 5 and 14; of the liver, in Case 5.

The amount of pain experienced by different patients varied widely. With some it was very moderate in both superficial and deep lesions, in others all the lesions, and especially affected joints, were exceedingly painful and sensitive.

*Description of Lesions.*—The abscesses may be conveniently divided for the purpose of description into two groups, the superficial and the deep. The former appear, usually in considerable numbers and often in successive crops, in different parts of the body as pea-sized or larger, moderately firm nodules in the subcutaneous tissue. The overlying skin is not modified at first and many of the nodes in the beginning can be detected only by palpation. During periods varying from ten days to several weeks the lesions enlarge, soften, and rupture, with the formation of fistulæ, open abscesses, or ulcers. Occasional nodes will undergo resolution and disappear after attaining a diameter of one-half an inch or more. Small, unbroken abscesses contain a peculiar glairy muco-pus. As the abscesses get larger, and especially after rupture and secondary infection, the discharge differs little if any from that of an ordinary abscess, though the contents of most of the abscesses, even when very small, are tinged more or less with blood. These superficial abscesses are always multiple, from three or four to a dozen or more being present at almost any period of the disease. Ninety-three such abscesses or the resulting lesions of the skin were counted at one time in one patient (Case 5). The deeper abscesses are larger, less numerous, and are usually associated with destructive processes in the bones, muscles, and other deep tissues. Psoas, perinephritic, abdominal, thoracic, and retropharyngeal abscesses of large size are on record. Superficial abscesses at the time of rupture vary in size from one-half to two inches in diameter. From some of the deep abscesses many ounces (in one instance over a quart) of pus have been evacuated.

The cutaneous lesions are found chiefly in the form of irregular, ragged, rather superficial ulcers, and have a soft base, a granulating floor, and a purulent or sanguino-purulent discharge which often forms bulky crusts. Some of the ulcers acquire a fungoid or papillomatous appearance, in others the borders are slightly elevated, and contain miliary abscesses. In some instances, as the result of transformation of one of the above-described ulcers but more commonly as the result of infection of the skin with the secretions from them, there are formed the characteristic lesions of cutaneous

blastomycosis. These are elevated patches of various sizes, with a verrucous or irregular papilliform surface, a soft, pus-infiltrated base, and a purplish-red, sloping border in which, with the aid of a hand-glass magnifying from two to six diameters, the characteristic miliary abscesses can be detected.

The joints or the tissues immediately about them were affected in eleven cases (7, 8, 9, 14, 15, 17, 18, 19, 20, 21, and 22). In some instances the joint showed for weeks no evidence of disease except pain, with or without a small amount of swelling. In others the inflammatory symptoms were more pronounced, and in two cases were so marked that a diagnosis of acute articular rheumatism was made. Inflammation and caries of some of the bones were recognized clinically in nine cases (1, 7, 8, 9, 13, 18, 19, 20, and 22). Spondylitis was present in Cases 7, 8, and 18. The eye was involved in two cases; a corneal ulcer in Case 1, and partial loss of vision in one eye in Case 20. From the corneal ulcer, in Case 1, and from the vitreous, by aspiration, in Case 20, pure cultures of blastomycetes were obtained. Slight or a moderate local or general enlargement of the lymph glands is noted in six cases (1, 4, 5, 7, 14, and 19), but in none was adenopathy at all prominent.

Diagnosis.—The disease in its various manifestations could be confused with an ordinary pyæmia, tuberculosis, syphilis, nephritis, or articular rheumatism. When abscesses or cutaneous lesions are present, it is a simple matter to establish the diagnosis by the examination of pus or tissue. The addition of a one to ten per cent. solution of potassium hydrate to the specimen will make the double-contoured capsule of the organism stand out clearly. When the parasites are present in very small number, they can be more easily demonstrated in tissue by allowing fragments to disintegrate in the potassium hydrate solution or more slowly in fifty per cent. alcohol. The organisms when present are easily found in the sediment.

In most of the cases in which systemic symptoms preceded the appearance of the abscesses there were indications of pulmonary, gastro-intestinal, or kidney disease, and in several blastomycetes were demonstrated in the sputum, fæces, and

urine. They are less difficult of demonstration either in secretions or in tissue than tubercle bacilli. In every case of multiple abscess formation with symptoms of a general pyæmia, as well as in cases of what appear to be atypical tuberculosis, the possibility of infection with blastomycetes should be considered.

TREATMENT.—The treatment of systemic blastomycosis has been on the whole very unsatisfactory, but it is probable that if the diagnosis can be made early, the proper employment of potassium iodide, tonics, and hygienic measures, including possibly a change of climate, would give much more favorable results. This statement is based on the fact that nearly all the cases of cutaneous blastomycosis have been improved and a number have recovered completely under the influence of potassium iodide. Furthermore, in Gilchrist's case (No. 4 of this series), the nature of the systemic condition was recognized at the very outset owing to the fact that it had been preceded for several years by local cutaneous lesions, and under the influence of potassium iodide the patient made a prompt recovery. Nos. "B" and "C" of the doubtful cases appended to this series also made good recoveries under this treatment. In Herrick and Garvey's case (No. 13) the patient did not improve greatly under the treatment, which included the use of potassium iodide, while in Chicago, and her condition was considered hopeless, but on removing to California she made complete recovery. In all the other cases in this series the disease was well advanced and the patient very much reduced in strength and weight before beginning the treatment. The hygienic surroundings were also unfavorable in several instances. In a few of the cases the use of potassium iodide was followed by decided temporary improvement, but in the majority it apparently had no influence. It is probable that, as in some cases of cutaneous blastomycosis, large doses (half an ounce or more daily) may be required to produce any effect. The use of sulphate of copper internally, as suggested by Bevan, is worthy of trial, though it proved of no benefit in two or three cases in which it was used.

Local lesions should be treated like those of cutaneous blastomycosis, with local antiseptics, of which a one per cent.

solution of sulphate of copper is one of the best, and with the X-rays.

PROGNOSIS.—Of the twenty-two patients, two have recovered (4 and 13); fifteen are dead; and five[1] (12, 15, 17, 21, and 22) are failing rapidly and probably can live but a few weeks. The prognosis is evidently exceedingly unfavorable, though, as suggested under the head of treatment, we believe that with an early diagnosis and proper treatment, including good hygienic surroundings, the mortality can be greatly reduced.

SUMMARY.—*Relation of Blastomycosis to Coccidioidal Granuloma:* A series of eighteen cases have been reported, chiefly from California, by Wernicke, Rixford and Gilchrist, D. W. Montgomery and Morrow, Ophüls and Moffett, and others, under the name of Protozoic Skin Disease or Coccidioidal Granuloma.[2] A comparative study of the reports of these eighteen cases and the twenty-two cases of blastomycosis shows that the two disorders have many features in common, but with a few more or less essential points of difference.[3]

The following features are common to both: A chronic infectious process characterized by the formation of multiple abscesses, nodules, and miliary tubercles which involve practically all of the organs and tissues of the body, including the skin, subcutaneous tissue, muscles, bones, joints, internal organs, and nerve tissues; symptoms simulating closely miliary tuberculosis or a chronic pyæmia; multiformity of cutaneous lesions which may be primary but are commonly secondary in origin; a marked tendency to involve joints; progressive emaciation and loss of strength with death usually from gradual

[1] Patients 21 and 22 died in October. No report has been received regarding the condition of the other three.

[2] For summaries and reviews of these cases see Ophüls, *Journ. Amer. Med. Assn.*, 1905, 45, p. 1291; and King, *ibid.*, 1907, 48, p. 743. Both of these men discuss the relation of coccidioidal granuloma to blastomycosis, but both look upon the latter chiefly as a local disorder and make the statement that but one case of blastomycosis had become generalized, Ophüls thus overlooking five cases, and King ten cases of systemic blastomycosis that had been published when they made their reports.

[3] Since this paper was read an article has appeared by Hektoen, *Journ. Amer. Med. Assn.*, 1907, 49, p. 1071, in which the relation of the two disorders is ably discussed.

exhaustion. In gross pathology and microscopic anatomy they both resemble tuberculosis, but differ from it inasmuch as in both blastomycosis and coccidioidal granuloma the organisms are pus-producers. The two conditions further resemble each other and differ from tuberculosis in the results of animal experiments in which subcutaneous inoculations are ineffective, though intraperitoneal and intravenous inoculations are quite uniformly successful in reproducing the disease. The infection atrium in several cases of both series has been apparently the respiratory tract.

As to points of difference, the average course of the coccidioidal disease appears to be somewhat shorter and there is a much greater tendency to extension through the lymphatic channels than in blastomycosis; these two features being due apparently to the fact that in tissues the organisms of coccidioidal granuloma multiply by endogenous spore formation, while in blastomycosis they proliferate solely by budding. It is true that in Cases 7 and 14 of this series certain cellular forms suggested strongly endogenous spore formation, but the further development of the spore-like bodies could not be demonstrated. In cultures the organisms of both series grow as mould fungi, showing some slight differences in their gross appearances, which may or may not prove to be important. Further study along uniform lines of investigation will be necessary before a satisfactory classification of the organisms in either series will be possible.

Blastomycosis and coccidioidal granuloma are undoubtedly closely related disorders, much more closely related to each other than is either to tuberculosis. It may be that further study will remove the one fundamental difference between them—that is, the behavior of the organisms in tissue—and prove the conditions to be but varieties of the same process. Hyde suggests (*Journ. Cutan. Dis.*, 1907, xxv., p. 34) that the recognized differences between the two disorders may be due wholly to climatic influence. On the other hand, it is probable that there may be several varieties of blastomycetes and other closely related fungi which are capable of producing in man a series of disorders of the same general clinical and pathological type.

SUMMARY OF CASES

1. BUSSE and BUSCHKE (Busse: *Centralbl. f. Bakt. u. Parasitenkunde*, 1894, xvi., p. 175; *Virchow's Archiv*, 1896, Bd. 146; Die Hefen als Krankheitserreger, Berlin, 1897. Buschke: *Volkmann's Sammlung klinischer Vorträge, Chirurgie* Nr. 218, 1898; "Die Blastomykose," *Bibliotheca medica*, Abteilung, Dermatologie, Stuttgart, 1902).

The patient, a delicate woman, 31 years of age, the wife of a shoemaker, was born and lived in Germany. Since early girlhood she had had repeated attacks of glandular swellings in the neck and axillæ. At the time of her examination most of the palpable glands were slightly enlarged.

According to Busse, the disorder under consideration began as a tumor similar to a gumma or softened sarcoma below the knee, though Buschke states that several months prior to the tumor formation acne-like lesions appeared on the face and neck. These lesions underwent necrosis in the centre and formed pea-sized or slightly larger ulcers, some of which healed spontaneously. Later many other similar ulcers and some slightly larger appeared. These ulcers were round, with sharply defined, ragged, somewhat undermined, slightly infiltrated wall-like edges, and surrounded by firm and livid borders. The base of the ulcer was soft; the floor covered with granulations and tenacious reddish-gray secretions. Subcutaneous nodules also were seen, some of which developed into ulcers. The tumor below the knee formed an abscess which extended to and involved the knee-joint. A few months later an abscess formed in the right ulna near the elbow, and another in the left sixth rib. The patient developed bronchitis with varying temperature, irregular pulse, and died of gradual exhaustion, a little more than a year after the appearance of the abscess below the knee.

A double-contoured, yeast-like fungus was obtained in pure culture from the different abscesses, the cutaneous lesions, a corneal ulcer, and the blood; it could not be demonstrated in the urine.

At the necropsy, granulation foci or abscesses were noted also in the lung, left kidney, and spleen. Microscopic tubercles in the lungs contained no tubercle bacilli. From all these areas the yeast-like fungus was isolated. The organism developed in cultures by budding and appears to have corresponded in all essentials to the organisms seen in blastomycosis. An adventitious capsule was described similar to that recorded in the Curtis case

(Case 2). Animal experiments showed the organism to be pathogenic for white mice, guinea-pigs, rabbits, and dogs, and demonstrated the absence of tuberculosis in the case.

2. CURTIS (*Annales de l'Inst. Pasteur*, 1896, x., p. 449).

The patient was a man, 20 years old, who developed rather rapidly multiple tumors on various parts of the trunk, neck, extremities, and groin. Some were firm and the skin over them intact; others formed abscesses which broke and discharged. The tumors were myxomatous in character and many were composed almost entirely of double-contoured and budding organisms, both intra- and extra-cellular. The patient died in about a year from meningitis of undetermined nature.

Cultures of the organism were obtained and in the hands of Anna Stecksen animal experiments were successful, inoculations in white rats producing miliary tumors in the pleura, spleen, kidneys, and lungs, from which the organism was recovered.

3. MONTGOMERY-WALKER (F. H. Montgomery: *Journ. Cutan. Dis.*, 1901, xix., p. 38; Walker and Montgomery, *Journ. Amer. Med. Assn.*, April 5, 1902).

The patient, an unusually well developed, vigorous man, 33 years of age, a carpenter, and resident of Chicago, came under observation in August, 1894, for a cutaneous disorder on his back. This began seven years before as a pimple on the site of an infected scratch, and had developed to form a large, irregular, elevated, verrucous patch, which, for want of a better diagnosis, was considered a very unusual form of verrucous tuberculosis. The man's general health had been unaffected.

Two months later (October, 1894), he presented a sensitive point on the ulna near the elbow, the entire joint being very much swollen and red. These symptoms disappeared in a few days. A week later he had a severe chill followed by five days of high temperature and great depression, accompanied by the appearance, just below the left scapula, of two deep-seated, globular, dull-red swellings, one-half inch and one inch in diameter. They suggested the tumors sometimes seen in erythema nodosum. One lesion healed, leaving a pigmented area; the other gradually assumed the characteristics of the original cutaneous lesion.

During the next six months he had seven or eight similar attacks, accompanied by the appearance of subcutaneous and cutaneous lesions on the back and face. During this time his general health deteriorated greatly. In March, 1895, he entered the County Hospital. No definite systemic disorder could be

detected at this time. Some of the lesions were curetted and cauterized. Two weeks later symptoms of pulmonary disease were recognized. A few days before his death, forty-three days after the operation, a clinical diagnosis of acute miliary tuberculosis was made.

At the autopsy the lungs, liver, spleen, and kidneys were found to be studded with miliary bodies, and the diagnosis of miliary tuberculosis was accepted. Five years later, however, histological study of the infiltrated areas of the lungs showed the typical structure of the blastomycotic nodule, including large numbers of budding organisms. Sections from the cutaneous lesions had shown the characteristic infiltration—with giant cells, miliary abscesses, epithelial hypertrophy, and budding organisms—of cutaneous blastomycosis.

Cultures were not made. Several guinea-pigs inoculated at different times with tissue from the cutaneous lesions, and at the time of the autopsy with tissue from the deep-seated organs, developed no tuberculosis. Prolonged search over several hundred sections disclosed no tubercle bacilli, except possibly four or five which morphologically and in staining qualities appeared to be identical with tubercle bacilli, but were found in a small abscess opening on the surface of the skin, where secondary infection could easily have occurred.

4. Gilchrist (*Brit. Med. Journ.*, 1902, ii., p. 1321).

The patient was a negro, 28 years of age, and acquired the disease while serving a sentence in the penitentiary. In July, 1907, he noticed a pimple or small boil on the abdomen and a month later a similar lesion appeared in the right loin. Both gradually increased in size and spread to form superficial ulcers. These were not painful but never showed any tendency to heal.

About four years later subcutaneous swellings appeared simultaneously in the right groin and right breast. These were painful, became swollen and ruptured in three or four weeks, discharging a thin mucoid pus. About two weeks later an egg-sized, soft swelling appeared at the lower end of the spine, and a soft small swelling occurred in the axilla.

At this time the patient was in apparently good general health, aside from a systolic heart murmur and irregular temperature varying from 99° to 101.5°. There was some adenopathy in the axillæ and in the groins. Of the original ulcers, one about 9 x 16 cm. occupied the right half of the abdomen, and another about 8 x 14 cm. extended from near the right border of the first ulcer over the

lumbar region to the back. Both showed the characteristic borders with miliary abscesses, and other features of cutaneous blastomycosis. The man recovered in about six weeks under treatment with iodide of potassium.

Pure cultures of blastomycetes were obtained from an unbroken abscess in the back and from other lesions. None could be obtained from the blood. A dog inoculated with pus from an unbroken abscess developed characteristic nodules in the lungs.

5. ORMSBY-MILLER (*Journ. Cutan. Dis.*, 1903, xxi., p. 121. Further report on Bacteriology by Otis and Evans, *Journ. Amer. Med. Assn.*, October 31, 1903).

The patient, aged 56, was a Swede, resident of Chicago, and a machinist by occupation. For several years he had lived over a stable. He was never robust, and for ten years had been rather feeble. In April, 1902, he caught cold which settled in his chest; he coughed considerably, had scanty expectoration streaked with blood, and became so weak he was forced to stop work. In July and August he had lesions on the nose and thigh, which healed under treatment.

In September, he entered the hospital, badly emaciated, complaining of a severe and persistent pain in the back. Physical examination disclosed no cardiac or pulmonary disease; blood examination showed anæmia; urine was normal.

In October, when the case came under the observation of Dr. Hyde and the writers, subcutaneous nodules, which softened, ruptured, and formed ulcers, had appeared on the right arm and both legs. From this time successive crops of similar lesions appeared at short intervals on different parts of the trunk, face, and limbs, as many as ninety-three being present at one time, while at death the entire body surface was covered with lesions in varying stages of development and involution. They appeared first as pea-sized or larger nodules, set deep in the hypoderm, and could be detected only by palpation. As they increased in size, approached the surface, and softened, the color of the skin passed through varying shades of dark red, blue, and even black. The abscesses thus formed eventually ruptured, discharged, and formed unhealthy-looking ulcers of various sizes. The majority of these ulcers had ragged, irregular edges, necrotic floors, soft bases, and a purulent and hemorrhagic discharge, which often dried to form heavy crusts. But one only of these ulcers assumed the characteristics of cutaneous blastomycosis. The patient's general health deteriorated rapidly, his temperature ranging from 100° to 103°, his pulse being

rapid and feeble. A month after entering the hospital there were bronchial breathing and other signs, which gradually grew more pronounced, of pulmonary involvement. There were moderate general adenopathy and slight œdema of the legs. Toward the end the patient became drowsy and at times comatose. He died December 4th, about eight months after the beginning of his disease.

The autopsy showed characteristic blastomycotic nodules and infiltration extensively in the lungs, which were almost entirely destroyed, and in the spleen. The kidneys, pancreas, larynx, and trachea showed the same type of lesions but in smaller numbers. The histological examination showed a structure characteristic of blastomycosis, including the parasites in immense numbers. Portions of the lung tissue seemed to have been almost wholly replaced by the parasites. Amyloid degeneration was present in the kidneys. A small, deep-seated subcutaneous nodule showed on section practically no change in the overlying epidermis, with only slight changes in the corium proper, consisting of vascular dilatation, some perivascular infiltration, œdema, slight degeneration of the collagen, and in places a small amount of cell infiltration. The infiltration was limited almost entirely to the subcutaneous tissue and occurred chiefly in the form of fairly well-defined zones. The characteristic structure consisted of a collection of the organisms, of leucocytes, especially polymorphonuclear, and red blood cells, around which were seen giant cells, connective tissue- and plasma cells. In places the component parts of the infiltration were more or less intermingled.

Pure cultures of the organisms were obtained repeatedly from cutaneous and subcutaneous lesions, and after death from the liver, spleen, kidneys, and from beneath the pleura. Inoculated guinea-pigs developed local lesions, and characteristic nodules in the liver and spleen (of one pig), from which the organism was recovered. One of the physicians attending the autopsy was accidentally inoculated on his finger, on which there appeared later a lesion characteristic of cutaneous blastomycosis.

Tuberculosis as a complication was absolutely excluded by the failure, after careful search, to find tubercle bacilli either in the sputum or in any of the tissues of the patient, by the failure of the patient to react to the tuberculin test, and by the fact that of the ten guinea-pigs and two rabbits inoculated with tissue from the patient none developed any symptoms of tuberculosis.

6. CLEARY (*Medicine*, November, 1904).

The patient, a man, 23 years of age, Italian, resident of this country three years, entered the County Hospital in May, 1903, giving a history of a cold and diarrhœa of several months' duration. He had a severe cough with mucopurulent expectoration, had lost twenty-five pounds, and was extremely weak.

Examination showed, immediately above the right sternoclavicular articulation, an opening to a sinus from which a small amount of pus escaped. The physical signs were suggestive of disease of the apex of the right lung, but the respirations were normal and no tubercle bacilli could be demonstrated in the sputum. The spleen was palpable; his feet and legs were slightly œdematous. The urine showed constantly marked albuminuria with abundant hyaline and granular casts. His temperature remained subnormal, his pulse, rapid and weak, and he died nine days after entering the hospital. The clinical diagnosis was nephritis.

The autopsy showed no cutaneous or subcutaneous lesions except the sinus in the neck which communicated with a small abscess. Numerous pin-head to pea-sized gray or yellow nodules, with softened, usually necrotic, centres from which whitish pus could be expressed, were found abundantly in the lungs, and in smaller numbers and of smaller size in the kidneys, adrenals, and liver. Microscopic lesions were found also in the myocardium and spleen. There were a chronic parenchymatous nephritis, atrophy of the heart, fibrous obliterative pleuritis, laryngitis, tracheitis, and bronchitis. The histological structure of the nodules was characteristic of blastomycosis, including the presence of budding organisms. The spleen, kidney, and adrenals showed marked evidence of amyloid disease. The cause of death was evidently a generalized infection with blastomycosis and a rather extensive amyloid disease.

No cultures were taken.

7. EISENDRATH–ORMSBY (*Journ. Amer. Med. Assn.*, October 5, 1905. With further history and autopsy record by LeCount and Meyers; *Journ. of Infect. Dis.*, 1907, iv., p. 187).

The patient, a Polish laborer, 33 years of age, stated that his present disease began in February, 1904, with a feeling of discomfort in the right side of the chest. About four months later cutaneous lesions appeared, and gradually increased in size, below the left ankle. These were followed at short intervals by other lesions on the cheeks, forearms, face, chin, and neck. In

November, he developed great muscular weakness and marked swelling of the feet and ankles.

On admission to the hospital, in February, 1905, he was very much emaciated, anæmic, and exceedingly weak; with moderate temperature, marked œdema of the face and extremities, clubbed nails, some inguinal adenopathy, bronchial breathing, dulness of the right upper lobe, absence of lung expansion, and other slight evidences of more extensive involvement of the lungs. The urine contained albumen and casts; budding blastomycetes were demonstrated in the sputum (the first case in which this demonstration was made); there were a number of subcutaneous nodules and superficial ulcers with but little induration and considerable sanguino-purulent discharge. The edges of the ulcers were slightly elevated and surrounded by a bluish-red halo in which were a few miliary abscesses. Some of the lesions were more or less papillomatous. After four months of treatment with potassium iodide internally, and with radiotherapy, antiseptic dressings, and surgical interference locally, the man improved greatly. After leaving the hospital and neglecting treatment he became worse, and returned to the hospital in September with all symptoms exaggerated and with a dorsal spondylitis. Further developments included: ankylosis of both knees, which, with the left elbow, were enlarged and tender but showed no redness or elevation of temperature; œdema; moderate general adenopathy; a diarrhœa with muco-purulent discharge, blood, and budding blastomycetes in the fæces. There was slight leucocytosis; temperature varied from normal to 103°. The patient died in a convulsion August, 1906, two and one-half years after the beginning of the disorder.

The autopsy showed: "Blastomycotic broncho-pneumonia; blastomycosis of the peribronchial lymph nodes, of the pleura, the subpleural, and retropharyngeal tissue, the liver, the kidneys, the colon, the spinal column (dorsal vertebræ), the external spinal dura, the cerebellum, the left elbow, both knee and ankle joints, and of the skin and subcutaneous tissue with ulcerations, fistulæ, and scars. Fibrous induration at root of right lung. Fibrous pleuritis. Passive hyperæmia of liver and spleen. Serous atrophy of adipose tissue. Emaciation. Adenoma of thyroid and accessory spleen." (Characteristic lesions were discovered in the cerebrum after the report of the case was published.)

Histological examination demonstrated the typical nodules of granulomatous tissue with necrotic centres, giant cells, and budding organisms in the lungs, peribronchial lymph glands, pleura,

and kidneys. The authors believe that in the cerebellum they found an area in which the organisms multiplied by endosporulation. They did not, however, demonstrate the intermediate stages of development between the supposed spores and mature organisms.

Blastomycetes were demonstrated in the sputum, and in pus, and obtained in pure culture from subcutaneous abscesses.

No tubercle bacilli could be found in pus, sputum, or tissue, and guinea-pigs inoculated with pus and tissue did not develop tuberculosis.

8. BASSOE (*Journ. of Infect. Dis.*, 1906, iii., p. 91).

The patient, a boy 17 years of age, a native of Chicago, entered the service of Dr. Senn at the Presbyterian Hospital, July 26, 1904. Four months prior to this date, he slipped and fell, injuring the right shoulder which became painful and swollen. For some time previous to this accident he had pain through the lumbar region and a "gnawing" sensation in the upper part of the right lung. He had a cough, low fever, night sweats, and had lost thirty pounds in weight. The urine was normal. July 26th, from a large abscess over the right scapula an ounce of slightly bloody pus was removed with a trocar. August 9th, a large abscess in the right lumbar region was incised and a pint of pus evacuated. During the following two months a daily rise in temperature to 100° and 101° was noted. On September 1st, a blood count showed 4,180,000 erythrocytes, and 19,500 leucocytes. November 15th, the patient left the hospital improved but was readmitted on December 18th. The abscesses had refilled; temperature varied from 100° to 103°; nausea, vomiting, and diarrhœa were present at times. Blood count in January showed marked anæmia, hemoglobin 50 per cent. In May, the urine showed large quantities of albumin with casts. During the last two months of the patient's life, diarrhœa was constant. The limbs became œdematous and painful. There was also considerable pain in the abdomen; irregular fever persisted, and emaciation increased. Patient died June 27, 1905, approximately fifteen months after the apparent beginning of the disease.

The autopsy and histological examination showed: "Chronic subcutaneous blastomycotic abscesses in right scapular region and in loin; abscess and sinus walls made up of vascular granulation tissue rich in polymorphonuclear leucocytes, mast cells, and blastomycetes. Blastomycotic caries of fourth and fifth lumbar vertebræ, with bilateral psoas abscesses. Disseminated blas-

tomycotic broncho-pneumonic foci in both lungs. Areas of necrosis with Langhans giant cells in the mediastinal glands. Amyloid degeneration of spleen, liver, adrenals, retroperitoneal, mesenteric, and mediastinal lymph nodes, kidneys, and colon. Bilateral fibrinous pleuritis and mild sero-fibrinous peritonitis. Chronic parenchymatous nephritis. Atrophy of the heart. Pulmonary œdema. Œdema of feet and thighs. Tigrolysis of ganglion cells of cerebral cortex and ventral horns of cord (only cervical portions of latter examined)." The striking features were the extensive amyloid degeneration and the large number of lesions, containing organisms, in the bones.

Blastomycetes were found repeatedly in pus from the various subcutaneous abscesses, and in the sputum, but could not be demonstrated in the fæces. Cultures were obtained; inoculated animals developed blastomycotic lesions (details not given in report). Tubercle bacilli could not be found in pus, sputum, or tissue, and inoculated guinea-pigs did not develop tuberculosis.

9. IRONS–GRAHAM (*Journ. of Infect. Dis.*, 1906, iii., p. 666).

The patient, a German, 47 years old, had worked for a number of years in a Chicago lumber yard. In March, 1905, a small subcutaneous nodule appeared on the inner surface of the right thigh, increased in size to that of a small hen's-egg, softened, broke, discharged a bloody pus, and slowly healed, leaving an indurated reddish-brown scar. Other similar lesions appeared in rapid succession on the legs, hips, arms, and face. Later, lesions appeared over the ankles, which became swollen, red, and tender, interfering greatly with walking. Systemic symptoms were limited to a slight fever and to gradually increasing weakness.

On September 11th, when admitted to the Presbyterian Hospital, he was weak and anæmic, but examination detected no disease of the thorax or abdomen. Scars, partially healed ulcers, subcutaneous nodes, and abscesses were present on the forehead and limbs. The superficial lesions began as small, hard, subcutaneous nodes, which gradually softened, broke through the skin, and discharged bloody pus in which were a large number of blastomycetes. Other abscesses were larger and deeper, some of them being subperiosteal in origin. There was a tendency in the deeper lesions to extensive dissection along the intermuscular fascia. Abscesses which had ruptured spontaneously formed ulcers, having an irregular, granulating floor, and rather ragged, slightly raised edges in which an occasional miliary abscess could be seen, such as are common in the lesions of cutaneous blastomycosis. The

ulcers were surrounded by dull red or purplish zones and were often covered by dry, hard crusts. Resulting scars were usually slight in comparison with the extent of the preceding ulcers. Abscesses which were incised and evacuated early healed without formation of the above described ulcers. After a short period of improvement the patient developed pain in the chest, cough with muco-purulent expectoration often streaked with blood, and physical signs indicating consolidation of the upper portions of both lungs. The patient grew steadily weaker, new lesions appeared over the body, and toward the end there was marked destruction of subcutaneous tissue with consequent undermining of the skin, and at several points bone was completely denuded. Temperature varied from normal to 102°. He had constant leucocytosis varying from 12,500 to 21,200. The urine showed slight albuminuria with occasional casts. Patient died January 18, 1906, ten months after the appearance of the first lesions.

The autopsy showed: "Miliary blastomycosis of lungs and spleen; ulcerative blastomycosis of the upper lobe of the left lung; multiple subcutaneous abscesses and sinuses involving the face, scalp, and all the extremities; retro-œsophageal abscess with erosion of the bodies of the seventh cervical to the fifth dorsal vertebræ (inclusive) and of the anterior surfaces of the vertebral extremities of the second to the fifth left ribs; erosion of left parietal bone; sloughing deep ulcer of the right thigh; abscess of thyroid cartilage; subpleural hemorrhages of right lung; bilateral fibrous pleuritis; hyperplastic splenitis; hyperplasia of mesenteric lymph glands; brown atrophy of the heart; colloid goitre (all lobes); slight sclerosis of anterior mitral leaflet and root of aorta; chronic gastritis; localized fibrous peritonitis; chylous ascites (slight); slight atrophy of liver; retention cysts of left kidney."

Histological examination of lung tissue showed characteristic nodules with necrotic centres containing organisms in large numbers. Serial sections proved the disease to be a broncho-pneumonia. Two blastomycetes were seen in a large blood vessel. From the retro-œsophageal abscess giant cells containing blastomycetes and other cells peculiar to this granuloma were demonstrated. The spleen showed areas of necrotic tissue with blastomycetes but no giant cells. Colloid changes were present in the thyroid.

Cultures of the organism were obtained from the subcutaneous abscesses, sputum, and kidneys (though smears and sections made from the kidney did not show the organism). No cultures could be obtained from the blood or from the urine. General miliary

blastomycosis was produced in one rabbit by inoculation of a pure culture. At the autopsy the streptococcus pyogenes was obtained in pure culture from the cerebro-spinal fluid, liver, spleen, and kidney, the staphylococcus pyogenes aureus was found in the liver and spleen, and in pus from the retro-œsophageal and knee abscesses.

Tubercle bacilli could not be found in the sputum, pus, or tissue, and guinea-pigs inoculated with pus and tissue did not develop tuberculosis.

10. HEKTOEN–CHRISTIANSON (*Journ. Amer. Med. Assn.*, 1906, xlvii., p. 247).

The patient was an Iowa farmer, 28 years of age. In November, 1904, he was attacked with an acute fever lasting one week, during which he suffered with headache, chills, and pain in the back and limbs. At the end of the second week numerous spots and lumps appeared on the face, head, neck, hands, forearms, limbs, and back. Some of these subsided while others enlarged and formed indolent ulcers. Several of these healed leaving atrophic scars. In June, 1905, some of the lesions increased in size; and submaxillary, supraclavicular, and other abscesses formed. In December, after a period of improvement, all the lesions became much worse.

On admission to the hospital, January 10, 1906, there were in all sixty lesions of the skin and subcutaneous tissues. There were loss of weight and some pulmonary symptoms. He left the hospital April 6th, somewhat improved. (We are informed by Dr. Hektoen that on returning home new lesions continued to appear, and that the patient died three or four months later of a sudden paralysis. There was no autopsy.)

Blastomycetes were obtained in pure culture from the abscesses and were demonstrated in sections taken from the ulcers. Neither blastomycetes nor tubercle bacilli could be demonstrated in the urine or sputum.

11. HEKTOEN–CHRISTIANSON (*Journ. Amer. Med. Assn.*, 1906, xlvii., p. 247).

The patient was a Norwegian farmer, 58 years of age, living in Iowa. There was a marked tuberculous history in the family. He had been a dipsomaniac for many years, but always healthy. In January, 1905, he was taken with an acute illness, and three weeks later a large abscess formed in the left lumbo-dorsal region. Later there was another attack with chills and general debility, followed in a short time by swelling under the skin on the left forearm. In May, red spots, 2 cm. in diameter and suggesting

ringworm, appeared over the right thigh and forearm. These grew to form elevated, granular areas, became crusted, and had an offensive odor. Some of the ulcers partially healed but soon formed again. In October, painful abscesses appeared on the right arm above the elbow and on the left forearm. There was no adenopathy. There was slight temperature with bronchial râles. (We are informed by Dr. Hektoen that death occurred in the early part of 1907.)

Histological examination of the ulcers showed the characteristic structure of blastomycosis and the organisms. Blastomycetes were demonstrated in pus and obtained in pure culture. Early examination of the sputum was negative, but later it was found to contain tubercle bacilli but no blastomycetes.

12. Coley–Tracey (*Journ. Med. Res.*, 1907, xvi., p. 237).

The patient, a New York policeman, 27 years of age, cut his left foot on a clam shell, in August, 1906, producing a slight wound which healed readily. The following December he had severe pain in the lumbar region and a few days later on the dorsum of the left foot, where a swelling appeared, softened, and discharged through a sinus between the great and second toes. The skin over the swelling, though tense, was not red. A week later, similar lesions appeared on the dorsum of the right foot and thigh. Above the knee two small, papillomatous, crust-covered tumors appeared in the skin. Many other subcutaneous swellings, varying in size from that of a hazel-nut to that of a small egg, appeared on various parts of the body, chiefly on the face, arms, and thighs. These tumors softened and discharged, forming ulcers or elevated, crust-covered, cutaneous lesions. With the tumors appeared a cough, which persisted and was accompanied by emaciation and loss of sixty pounds in three weeks. The man made no improvement under treatment with potassium iodide but continued to fail in general health. On April 8th he had sixty-five tumors distributed over the various parts of the body. On April 25th, many more had developed and the patient was failing so rapidly that it was thought he could not live more than one or two weeks.

Histological examinations showed granulomatous tissue, giant cells, with double-contoured and budding organisms. Blastomycetes were demonstrated in pus, sputum, tissue, and in the mucopurulent discharge from the rectum. Pure cultures were obtained. A mouse and dog were inoculated successfully.[1]

[1] Although the organisms in this case multiplied in tissue and pus solely by budding and never by endogenous spore formation, the author classes

13. HERRICK–GARVEY (Preliminary report, *Journ. Amer. Med. Assn.*, 1907, xlix., p. 328; a more complete report is in preparation by Dr. A. C. Garvey.)[1]

The patient, a married woman, 24 years old, resident of Chicago, was in good health aside from certain neurotic and hysterical tendencies.

The present disorder began April 24, 1904, with "spots like hives and pains like rheumatism" over the left gluteal region. During the two years through which the disorder persisted there appeared seventy-nine different lesions, varying in size from 1 cm. to 8 cm. or more in diameter. They began as slightly reddish or purplish spots accompanied at times with an infiltration below the skin. They gradually became larger, tender, and formed abscesses which would break through the skin and discharge a thick, yellowish pus. A few underwent spontaneous resolution without rupture. Evacuation of the pus left an indolent, granulating ulcer. Extensive undermining of the skin with burrowing of pus occurred in places, especially over the left gluteal region, where from a large abscess which apparently had its origin in the pelvis a quart of pus was removed. In some of the lesions bone was destroyed. The scars were comparatively slight and somewhat resembled those of syphilis. The general health gradually became impaired after the first few weeks. There was slight temperature reaching at times 103°, together with rapid pulse, hæmic murmur, cough, and at times evidences of slight consolidation of the right apex; occasional traces of albumen; loss of weight; anæmia; low hemoglobin, and increase in leucocytes. The patient was neurotic and hysterical, slept poorly, and complained greatly of pain at times. She was treated with large doses of iodide of potassium, tonics, sedatives, and antiseptic local dressings. In February, 1906, she went to California but slightly improved. She lived largely out-of-doors and gained rapidly. In August, 1906, the last sore disappeared, and July, 1907, she was apparently in perfect health.

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it with cases of coccidioidal granuloma because it was generalized, and makes the statement (evidently taken fron Ophüls and Brown) that only one case of blastomycosis had become generalized. At the date of his report eleven cases (with seven autopsies) of generalized systemic blastomycosis had been published, in which the clinical histories and the organisms described corresponded closely with those of his own case.

[1] Dr. Hyde, to whom the patient was referred for diagnosis and who saw her after her remarkable recovery, has commented on the influence of climate on the disease. *Journ. Cutan. Dis.* 1907, xxv., p. 34.

Blastomycetes were repeatedly demonstrated in pus from the subcutaneous lesions, from some of which Dr. Ormsby obtained pure cultures.

14. MONTGOMERY (*Journ. Cutan. Dis.*, 1907, XXV., p. 393).[1]

The patient was a locomotive engineer, 32 years of age, in fair general health. In 1902 and 1903, while running a locomotive through a swampy region in the South, he had several attacks, from which he made more or less complete recovery, of what was considered to be malaria. From January to April, 1903, he was unable to work, being weak and depressed, and suffered from pain in the chest which interfered with his taking a deep breath. He spent the summer in the North and apparently recovered, returning to the South in September. In November, a pea-sized lump appeared beneath the skin on the right cheek. This increased slowly to the size of a hazel-nut, became sensitive and inflamed, and in about four weeks, broke and discharged like a boil. The resulting ulcer never healed, but slowly extended peripherally. At irregular intervals during the following eight months, lesions appeared on the lower part of the cheek, on the right jaw, back of the right ear, and under the chin. These all began as small lumps freely movable beneath the skin and in from two to six weeks formed painful abscesses which ruptured, forming open ulcers or masses of infiltration with fistulous tracts leading from them. About two months after the appearance of the first abscess he had an attack of dropsy which lasted about ten days. At this time there was detected in the sigmoid region a peculiar hard mass, for which during the succeeding three months the patient received a number of injections of Alexander's cancer serum. During this treatment he lost rapidly in weight, but after its suspension largely recovered his general health.

On examination August 9, 1904, he presented the appearance of a man in fairly good general health except that he was under weight, had slight emphysema around the borders of the lung, slight enlargement of the cervical glands, and a peculiar firm mass apparently due largely to muscular resistance in the sigmoid area. On the right cheek were two irregularly oval ulcers which showed the characteristic elevated, sloping, dull-red border containing miliary abscesses, a soft, pus-infiltrated base, and a papillomatous surface. Two pea-sized nodules near the border of the larger ulcer were due evidently to inoculation of the skin from secretion

[1] This case was demonstrated before the Chicago Dermatological Society in April, 1905, at which time but four other cases had been reported.

from the ulcer. A similar ulcer was located back of the right ear. Smaller ulcers with fistulous tracts leading to deep-seated masses of infiltration were located under the right jaw and under the chin.

With iodide of potassium and tonics internally, together with antiseptics and the X-ray locally, the man made some improvement, but the disease was never completely arrested. In January, 1905, he became weak, emaciated, and cachectic, with irregular temperature and night sweats. A general examination by Dr. Joseph Capps disclosed slight dulness of the apex of the right lung, some enlargement of the spleen, and a leucocytosis of 20,400. The hard mass in the sigmoid area persisted, there were subcutaneous nodules near the symphysis pubis, and bands of infiltrated tissue along Poupart's ligaments, most marked in the left side. The thighs could not be fully extended.

In January, new subcutaneous swellings appeared in the neck, breast, groin, foot, and elbow. The larger joints were painful but showed no evidence of inflammation. He had an irregular temperature varying from 100° to 102°. He developed no new pulmonary or other symptoms, but gradually became weaker and died August 29, 1905.

The autopsy (Dr. Peter Bassoe: opening of the abdominal cavity only permitted) showed multiple subcutaneous abscesses with formation of fistulous tracts, and a large psoas abscess extending into the thigh and connecting through a fistula with an ulcer in the left groin. Localized adhesive peritonitis (chiefly periappendicitis and perihepatitis); chronic cervical and inguinal lymphadenitis.

Histological examination showed the characteristic blastomycotic structure, with organisms, in the lungs, spleen, appendix, and inguinal lymph glands.

Pure cultures of blastomycetes were readily and repeatedly obtained from different abscesses. Nearly every tube inoculated with pus from an unbroken abscess produced a pure culture, yet smears of pus from these same abscesses showed very few of the organisms of the usual sizes and forms. The organism was unusually pathogenic for guinea-pigs; injection into the abdominal cavity of a pure culture being in each instance followed by extensive systemic infection, with the formation of characteristic nodules in many of the organs. From these organs the parasite was obtained readily in pure culture, but was found in exceedingly small numbers, in the usual forms, either in smears or in sections. The number of organisms thus demonstrable seemed to be wholly

insufficient to account for the readiness with which cultures were obtained, or for the unusual pathogenicity of the organism for guinea-pigs. Pus from the abscesses, and sections of tissue, both from the patient and from inoculated guinea-pigs, however, showed large numbers and masses of round cells about the size of a red blood corpuscle, which bore a strong resemblance to small blastomycetes, though the double-contoured capsule and other definite structures were not demonstrable. The large number of these cells, their grouping, and their uniform size suggested multiplication by sporulation, but no relation between them and the larger budding forms could be determined, nor could large bodies containing spores be found. The unusual activity and virulence of this organism could be readily explained by the supposition that in this case the parasite existed abundantly in pus and tissue in small forms (the result probably of sporulation), with occasional larger and budding bodies.

15. ORMSBY (new case).

The patient was an Indiana farmer, 38 years of age. In January, 1902, he had suppurative tonsillitis lasting thirty-six days and terminating in pneumonia which confined him to his bed for seven weeks, following which he had cough with moderate expectoration. Beginning April 25th, he was confined to the house eight weeks with a painful swelling in the left knee-joint. Another swelling which appeared above and behind the knee was opened and pus removed. Small crusted lesions, which when opened gave exit to dark bloody pus, formed on the dorsum of the foot, the right hip, the back of the right hand, and the face. At the time of his examination, July 31, 1903, the patient was pale, anæmic, had lost much weight, and was very feeble. There were a number of cutaneous and subcutaneous lesions distributed over the body beside those described above. The cutaneous lesions all began as deep-seated swellings which gradually increased in size, softened, and discharged pus. After several months' treatment with potassium iodide and radiotherapy the patient showed some improvement and returned to his home in Indiana. The last report received from the patient's family physician was in May, 1904, twenty-five months after the beginning of his disorder, at which time the man was not expected to live more than a few weeks.

A slightly unusual feature in this case is the fact that practically all the cutaneous lesions, instead of as in most instances a few of them only, sooner or later assumed the characteristic features of cutaneous blastomycosis.

Blastomycetes were demonstrated in the pus and secured in pure culture.

16. IRONS (communication from Dr. E. E. Irons, of an unreported case.)

Patient, a woman 20 years of age, entered the Presbyterian Hospital, November 8, 1905. The preceding January pains appeared in the left arm and shoulder and soon after in the right leg. A small area of tenderness developed two inches below the knee. There was no redness or tumefaction at first, but in a month swelling appeared and gradually extended until on entrance to the hospital it occupied the entire popliteal region. There were also small swellings on the back and in the right lumbar region, and a large one, two inches in diameter, in the left interscapular space. There was no discoloration or pain connected with the lesions.

On admission to the hospital, physical examination disclosed nothing further than a few signs suggestive of pulmonary disease. There was no cough or expectoration and her general health was only slightly impaired. The abscess in the popliteal region ruptured and discharged a pint of bloody pus. On enlarging the opening and curetting the abscess, a sinus was discovered which extended upward between the muscles of the thigh, and appeared to connect with an abscess near the pelvis. Blood count was 3,992,000 red cells; 9500 leucocytes; 73 per cent. hemoglobin. Temperature varied from 99° to 100°. After one month's treatment with potassium iodide and tonics internally, she left the hospital unimproved and died a few months later. No autopsy was held.

Blastomycetes were demonstrated in the pus from the abscesses, and the organism was grown in pure culture.

17. HYDE-MONTGOMERY (new case).

Patient was a machinist, 24 years of age, a resident of Chicago. In 1899 the great toe of his left foot was amputated for what was supposed to be tuberculosis. Three weeks later severe pain appeared in the hip and persisted for three months. During this period a deep abscess formed in the middle of the thigh, opened, and discharged. He also had pain in the right knee followed by the formation of an abscess under the skin, which broke after two or three months, leaving an ulcer which has never entirely healed. During this period of activity of the disease he had some fever, lost a great deal in weight, became weak, thinks his left lung was affected, but does not remember having had cough or expectoration. After the first few months his general health gradually improved and the only lesion was the persistent ulcer on the outer surface

of the right knee, which after attaining the size of a silver dollar remained stationary for years.

On examination, August, 1906, the outer surface of the knee showed a characteristic area of cutaneous blastomycosis. At this time the man was pallid and slightly anæmic, but showed no other evidences of systemic disease. After eight months' treatment with the potassium iodide internally, radiotherapy, copper sulphate and other antiseptics locally, the patient's general health improved and the local lesion nearly disappeared. In July, 1907, his general health had again decidedly and rapidly deteriorated, and the knee had become very much swollen and presented a fistulous opening from which pus escaped. After a single visit to the dispensary he disappeared from observation, before a complete examination could be made.

Blastomycetes were demonstrated in smears and pure cultures obtained from the cutaneous lesions and from pus in the fistulous tract.

18. OSWALD (new case seen by one of us [Ormsby], at the Alexian Brothers' Hospital, through the courtesy of Dr. Oswald and Dr. Louis Schmidt. The following notes are necessarily incomplete and it is hoped that at a future date the case will be recorded in full).

The patient was a man with a cough and other evidences of a grave constitutional disorder; at the time of this visit he was very much emaciated, and very near death. There were cutaneous and large subcutaneous lesions on the face, chest, and other parts of the body, and several joints and a number of vertebræ were affected. On our visit that day the organism of blastomycosis was demonstrated in the sputum and in pus obtained from the knee joint, from a large subcutaneous abscess on the chest, and from a cutaneous lesion on the face.

Shortly after this the patient died, the autopsy being performed by Dr. W. A. Evans. We are informed that blastomycotic lesions occurred generally throughout the body, and that the bodies of several vertebræ were practically destroyed, together with some of the spinal cord.

Pure cultures were obtained by Dr. Jerger, who also demonstrated the pathogenicity of the organism for guinea-pigs and the absence of tuberculosis in the case.

19. KROST–MOES–STOBER (new case).[1]

The patient, a Polish laborer, and resident of United States

[1] We are indebted to Dr. Stober for the record of this case, and to Dr.

four years, entered the Cook County Hospital, April 8, 1907. The present disorder began four months before, as a severe cold with cough and expectoration, followed shortly by pain in the back. A month later a swelling appeared on the dorsal region at the left of the median line. Cough and expectoration increased; the appetite was poor; he lost in weight; and at the end of six weeks general weakness prevented his continuing at work. Two months after the beginning, a painful swelling developed on the dorsum of the left hand and foot, and over the left eleventh rib; a warty growth appeared at the right ala of the nose, followed by enlargement of both submaxillary glands.

Examination on admission revealed in addition to the above findings: anæmia; dulness over the left lower lobe; bronchophony with râles; a little enlargement of the heart; inguinal adenopathy, and slight temperature. There were small papillomatous growths on the forehead and right forearm. Blastomycetes were demonstrated in pus from the subcutaneous swellings, in the sputum, and in the urine, which showed also a few casts and leucocytes. (The autopsy showed that the organisms in the urine came from the prostate gland.) Several blood counts showed leucocytes from 14,200 to 29,800, with hemoglobin about 70 per cent. The patient steadily lost strength; pain increased; sputum became more abundant, muco-purulent, and at times bloody; there was profuse sweating, and new abscesses appeared on different portions of the body. The patient died June 14, 1907.

Autopsy showed: miliary and nodular blastomycosis of the lungs, kidneys, spleen, cerebrum, pleura, and lymph glands; ulcerative blastomycosis of the cerebrum, cerebellum, prostate, pleura, and skin; multiple abscesses of the osseous, muscular, and subcutaneous tissues; parenchymatous nephritis; fatty changes, adenoma, and angioma of the liver; adenoma of the thyroid; general lymphatic hyperplasia; shaven beard appearance of Peyer's patches; atrophy of the testicles; fibrous pleuritis. Some of the subcutaneous abscesses were six inches in diameter, and extended deep into the muscular tissue. There were abscesses limited to bony structures, others burrowed into surrounding soft structures. Erosions and more deeply seated destructive changes occurred in the bones of the hand and the feet, the sternum, ribs, and vertebræ. The presence of large numbers of myelocytes in the blood led the reporters to the belief that the medulla of other bones was

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Simmons, editor of the *Journ. Amer. Med. Assn.*, where it is to be published, for allowing us to abstract the article for this review.

probably invaded. The deep cervical and inguinal glands were much enlarged; the superficial cervical, submaxillary, and axillary glands were slightly larger than normal.

A histological examination of the affected areas in the bones, joints, and internal organs, including the cerebrum, cerebellum, and prostate gland, demonstrated the presence of blastomycetes, together with the granulomatous structure usually seen in blastomycosis.

Pure cultures of the organisms were obtained during life from the blood, various abscesses, and cutaneous lesions, and post mortem from the knee joint, spleen, and pleura, and a mixed culture from the prostate. No tubercle bacilli could be found in the sputum, pus, or tissue.

20. CHURCHILL–STOBER (to be reported in the Cook County Hospital reports).[1]

The patient, a Polish laborer, 39 years old, employed for the past four years in scrubbing and dusting Pullman cars, entered the Cook County Hospital, May 14, 1907. For three months he had suffered pain in the right side of the head and face, most marked over the malar prominence. Later, pain aggravated by movement appeared in the right hip and knee, above the shoulders, and in the left wrist. The knee and wrist became very much swollen and exceedingly tender. From the beginning he had a moderate cough with occasional blood-stained sputum. There was marked loss of vision in the right eye.

Examination showed the patient to be markedly emaciated, twenty pounds under his average weight; his temperature 101°, with physical signs of beginning consolidation of the upper right lobe. The right hip, knee, and sterno-clavicular joints were swollen, red, and painful. Over the knee there was fluctuation. The right great toe contained an abscess which discharged thick, blood-stained pus. Scattered over the body were numerous pustular lesions and fourteen subcutaneous abscesses (one under the scalp), varying in size from one to five centimeters in diameter. The conjunctiva of the right eye was red and œdematous. The patient was given potassium iodide but apparently without effect. He had an irregular temperature with profuse sweats; pulse and respiration were rapid. The abscesses slowly enlarged and the patient died of gradual exhaustion, June 20, 1907.

Autopsy showed: Serofibrinous pleuritis, pericarditis, purulent

[1] We are indebted to Dr. Stober for notes of this and the two following cases.

bronchitis, parenchymatous degeneration of the kidneys and liver, fibroid induration of the lungs, fibroid pleuritis; miliary blastomycotic nodules of the lungs, pleura, kidneys, spleen, peribronchial lymph glands; multiple blastomycotic abscesses of the lung, prostate, and the osseous, muscular, and subcutaneous tissues; multiple blastomycotic ulcers of the skin; blastomycosis of the right eye.

Pure cultures of blastomycetes were recovered from the vitreous humor of the eye by aspiration. Blastomycetes were also recovered from the pericardial fluid, pleural fluid, and various abscesses, including the prostatic abscess; streptococci were recovered from the heart blood. Blood cultures, as well as examination of the sputum and urine, showed neither blastomycetes nor tubercle bacilli.

21. Lewison–Jackson (to be reported in the Cook County Hospital reports).

The patient, an Italian boy, aged 17 years, an organ grinder and machine-shop helper, entered the Cook County Hospital May 20, 1907. Five months before this an abscess appeared in the middle of the right thigh, ruptured in two weeks, and discharged a thick, dark-brown pus. The resulting ulcer soon became covered with a heavy crust. Two months later the right knee-joint became the seat of pain, limitation of motion, and later of swelling. The following month the left knee became similarly involved, and subsequently the left ankle, both elbows, left wrist, and the first metacarpo-phalangeal joint of the left hand. One month after the first joint symptoms, subcutaneous abscesses and crust-covered ulcers began to appear on the face and scalp.

On examination, the patient was found to be anæmic, poorly developed, and suffering with great pain and stiffness in the joints. Slight changes from normal were detected in the physical examination of the lungs. Urine practically negative. Blood: leucocytosis 9600, cultures negative. Temperature varied from 101° to 103.6°; respirations and pulse both rapid. With tonic treatment and potassium iodide great improvement occurred, and he was discharged July 8th, but was readmitted in ten days, with a sharp recurrence of all symptoms. This time better results were obtained with cupric sulphate used both locally and internally, and on August 17th he was discharged a second time in fairly good condition, though he was not well and was not free from cutaneous, subcutaneous, and joint lesions.

Blastomycetes were demonstrated in the abscesses, also later in the sputum. Tubercle bacilli not found.

22. MYERS–STOBER (to be reported in the Cook County Hospital reports).

Patient, 20 years of age, was a clerk in Chicago, but had been some months before employed as a laborer on a dredge in Arkansas and Iowa. Admitted to Cook County Hospital May 8, 1907, in the service of Dr. Ryerson. For four months he had been ill, suffering with pain, shortness of breath, chills and fever, and occasional night sweats. For a month he had pain in the right external malleolus, which was worse at night. The leg had become swollen and tender. He had some patches on the face which he had been told were lupus spots.

On examination the patient was seen to be poorly developed, anæmic, and emaciated. There were some evidences of consolidation of the lower lobe of the lung. Temperature was normal; urine examination negative. On the neck was a large, soft, fluctuating mass. A large number of reddish areas looking as though they contained pus, and abscesses of varying sizes, were present on different parts of the body. The right external malleolus was swollen, red, tender, and painful. Several joints were similarly involved but to less extent. On opening and draining the swelling over the malleolus, necrotic bone was exposed. The patient slept but little, complaining of pain, especially at night. His temperature varied, ranging as high as 102.6°.

Blastomycetes were demonstrated in pus from a number of unbroken abscesses and were obtained in pure culture.

PROBABLE CASES

(*A*) HYDE–MONTGOMERY (reported as a case of cutaneous blastomycosis in *Journ. Cutan. Dis.*, 1901, xix., p. 49).

The patient was a male, aged 47, a resident of Chicago and a sewer builder. At the time this case was reported, large areas of cutaneous blastomycosis existed upon the arms and forearms. Under treatment the areas nearly disappeared but returned on his neglecting treatment, as he did for many months at a time. About four years after the beginning of his trouble he reappeared, after a long absence, with much more extensive and severe cutaneous lesions than ever before, and with fever, cough, anorexia, and marked general weakness, the symptoms pointing strongly to systemic infection with blastomycosis. He disappeared from view and died soon after in the poorhouse, where the nature of his disease was not recognized, and no autopsy was obtained.

(*B*) HYDE–MONTGOMERY (reported as a case of cutaneous blastomycosis, *Journ. Amer. Med. Assn.*, June 7, 1902).

The patient was a well-to-do woman, 56 years of age, and a resident of Chicago. In November, 1901, she experienced a severe mental shock. Three weeks later a lesion appeared on the dorsal surface of the left hand, and within two weeks other lesions appeared on the left cheek, left heel, right leg, right big toe, right foot, and left arm. Some of these began as "pimples," others as small nodules deep in the skin. At the same time subcutaneous nodes varying in size from that of a bean to a walnut appeared over different portions of the breast, thorax, and left thigh. These subcutaneous swellings became slightly red on the surface and very sensitive to the touch, but gradually underwent resolution without abscess formation. In January, lesions appeared on the upper lip and on the right index finger.

The cutaneous lesions were characteristic, clinically and histologically, of cutaneous blastomycosis. The organisms were demonstrated and recovered in cultures from the lesions. Under treatment with potassium iodide internally and radiotherapy locally, the patient made a complete recovery. Looking at this case in the light of recent experience it is highly probable that the multiple, somewhat widely disseminated, subcutaneous nodes were blastomycotic in origin.

(*C*) Hyde–Montgomery (new).

The patient was a successful business man of unusually robust appearance, 58 years of age, and a resident of Illinois. In October, 1904, he caught a cold accompanied by headache, cough, some expectoration, soreness in the chest, and general weakness. November 17th he went to bed and called a physician for the first time. The symptoms suggested a possible pneumonia. Ten days after going to bed, the pain in his chest became more marked and an abscess formed which on December 4th opened just below the upper border of the sternum and discharged a large quantity of pus. The patient slowly recovered his health, being confined to the house two months. On examination January 30, 1905, there was found a small fistula one inch in length lying across the sternum, and characteristic lesions of cutaneous blastomycosis on the right cheek and on the dorsum of the right hand. These appeared at first as lumps beneath the skin a few weeks after he began to feel badly. The patient stated he felt fairly well but was twenty pounds under weight. Examination of the chest by Dr. Joseph Capps disclosed signs of moderate infiltration of the apex of the right lung.

His physician reported complete recovery after two and

one-half months of treatment with potassium iodide and radiotherapy.

Blastomycetes were demonstrated in smears and obtained in pure cultures from the miliary abscesses in the borders of the cutaneous lesions.

The symptoms and course of his illness, his recovery under treatment with the iodide of potassium, and the subcutaneous origin of the cutaneous lesions, all point strongly to its having been a case of systemic blastomycosis from which the patient made a full recovery.

(*D*) ALBERS (*Transactions of the Chicago Pathological Society*, March 1, 1907).

The patient was a Wisconsin farmer, 64 years of age, a Scandinavian by birth. In July, 1906, he began to suffer from pain in the chest and abdomen, sore throat, cough, dysuria, anorexia, and loss of strength. He was emaciated; his pulse was weak and irregular; but his temperature was normal, and physical findings relative to the lungs were negative. The skin lesions are described as raised, hyperæmic spots, or pimples, somewhat larger than an ordinary pimple, scattered over the body.

Specimen of bloody, tenacious sputum sent to the laboratory for examination contained no tubercle bacilli but many blastomycetes. The organism was obtained from the sputum in almost pure culture.

The subsequent history of the patient was not obtainable.

(*E*) EASTMAN–KEENE (*Annals of Surgery*, November, 1904).

The patient was a woman who stated that she had suffered for six weeks with what she termed "boils." The first one appeared as a small, hard lump about the size of a pea on the back of her left hand. It grew to the size of a small pigeon-egg and then gradually disappeared. It was accompanied by no sensations nor was there any discoloration of the skin. A few days after this had disappeared she noticed beneath the skin near the elbow a hard, globular body, about one and one-half inches in diameter. This at first was similar to the growth on the back of the hand, being neither painful nor discolored. It, however, gradually increased in size until she opened it with a needle when a thin, grayish, watery substance escaped. Budding blastomycetes were found in the discharge which had persisted up to the time of her examination. A similar lesion, the size of a hen's egg, which later broke down and discharged, was present in the axilla.

The patient was the mother of a girl whom Drs. Eastman and

Keene had been treating for a wound that was the seat of a mixed infection with bacillus pyocyaneus and blastomyces.

The mother stated that her son, 19 years old, had at the same time a similar lesion on his hip. A small kernel appeared beneath the skin, grew to the size of a hen's egg, broke, and was discharging. The reporters conclude that there were three members in one family infected with blastomycetes.

(Unfortunately, the nature of the lesions on the boy's hip was undetermined, and the possibility in the mother's case of secondary infection with a yeast fungus of an ordinary open and discharging ulcer cannot be eliminated.)

*Discussion*

Dr. Joseph Zeisler, of Chicago, said that in view of the fact that there were a great many dermatologists who still had doubts as to the genuineness of blastomycosis, he took the privilege of briefly discussing this subject, as he had seen many of the cases reported by Drs. Hyde, Montgomery, and Ormsby. He had personally had one case of systemic blastomycosis which was extraordinary in many ways. One feature of the case was the development of abscesses and papillary growths of the skin, and the formation of an enormous abscess in the gluteal region which discharged about half a pint of pus daily. The patient was given potassium iodide, together with X-ray and other methods of treatment, with very little result. She finally became discouraged and turned to Christian Science. Subsequently, she went to California, where she recovered spontaneously.

Dr. Zeisler, in order to illustrate the difficulties ofttimes connected with this subject, referred to the case of a young woman, about twenty, who fell ill with a high fever which pointed to a pulmonary infection of some kind. For many days a miliary tuberculosis was suspected. She was seen by several specialists, but no sputum could be obtained and no definite diagnosis was made. Finally sufficient sputum was secured and submitted to Dr. Hektoen, who upon microscopic examination found the blastomycetes present. Dr. Zeisler said this case emphasized the fact that we had still something to learn in regard to the possibilities of blastomycosis.

Dr. T. Caspar Gilchrist, of Baltimore, said that when the first specimens of blastomycosis (described at that time as protozoic dermatitis) came to the Johns Hopkins Hospital, Dr. Welch was

PLATE XVIII—To Illustrate Dr. Montgomery and Dr. Ormsby's Article.

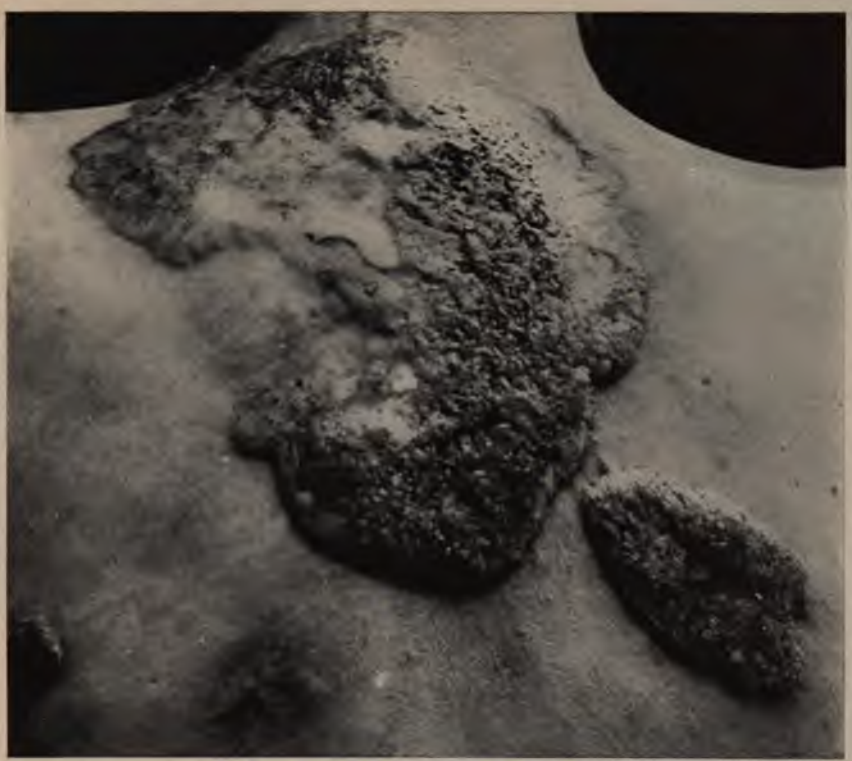

FIG. 1.—Photograph showing typical cutaneous lesion with metastatic lesions below (From Case 3).

FIG. 2.—Photograph, taken five weeks before death, showing nodules and ulcers on limbs (From Case 5).

PLATE XIX—To Illustrate Dr. Montgomery and Dr. Ormsby's Article.

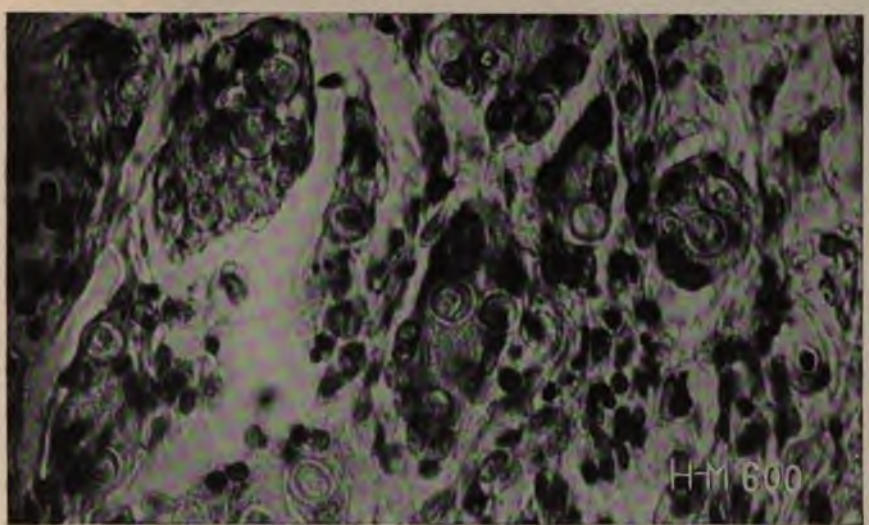


FIG. 3.—Showing group of giant cells containing the organisms (X 600).

FIG. 4.—Sediment from tissue disintegrated in 50% alcohol, showing organisms in various stages of budding.

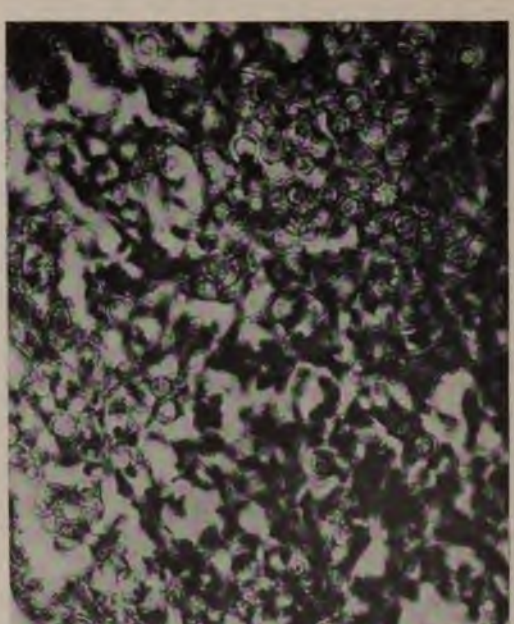

FIG. 5.—Section of liver showing miliary abscesses crowded with the organisms (From Case 5).

PLATE XX—To Illustrate Dr. Montgomery and Dr. Ormsby's Article.

a b c

FIG. 6.—Cultures four weeks old: (a) on glucose agar; (b) on glycerine agar grown at room temperature; (c) on glucose agar grown in incubator (From Case 14).

FIG. 7.—Old culture showing large round bodies and short thick mycelium containing spore-like bodies.

in doubt whether the organisms were blastomycetes or protozoa, but after considerable investigation by Dr. Stiles, it was decided that the case was one of protozoic infection. In that case, the local manifestations were present for ten years before the disease became systemic.

There was another class of cases, Dr. Gilchrist said, in which there was a budding formation which we formerly thought characteristic of the blastomycetes. Two such cases had been reported in negroes in which the skin manifestations were accompanied by large subcutaneous abscesses. Upon examination of the blood, it was found that the blood of these patients agglutinated the organism. Hektoen had made similar observations and Ophüls claimed that the two diseases described as protozoic dermatitis and blastomycetic dermatitis were alike. Many of the lesions in these cases disappeared spontaneously. Whether the two organisms belonged to the same group the speaker said he did not know. Histologically they were the same.

Dr. James Nevins Hyde, of Chicago, said he believed we would eventually settle the question regarding the identity or non-identity of systemic blastomycosis and granuloma coccidioides. He referred to one point to which he thought special attention, thus far, had not been paid *à propos* of the case referred to by Dr. Zeisler, in which the speaker said he had made the original diagnosis. He had noticed that in sending specimens of blastomycotic disease either in the form of cultures or tissue to European colleagues, they had reported that they were unable to make a diagnosis from the material that reached them. This was probably due to degeneration of the organism when removed from its more favorable soil. This fact, that the growth seemed to be limited in possibilities of development to a definite region, had impressed him more deeply in every succeeding year since the beginning of these observations; and in a communication recently published in the *Journal of Cutaneous Diseases* he had discussed this feature of the interesting problem.

In the first case mentioned by Dr. Zeisler the patient went to California, where her recovery was most remarkable. She subsequently presented herself in perfect health, showing the scars of the old abscesses, which originally had been opened and which contained quantities of pus, containing pure cultures of blastomycetes.

Dr. Hyde said the fact that they had seen so many cases of

blastomycosis in Chicago had been a surprise to him and to his colleagues in Chicago, as well as to their colleagues in New York, Boston, and elsewhere. He felt justified in saying that when studying the few cases reported as occurring in the East, the symptoms were not nearly so exaggerated or classical as those observed in Chicago. He therefore had the conviction that the organism which produced the disease was more or less restricted to a fixed geographical distribution and that for reasons not known that special area of favorable soil was not very far distant from Illinois and Indiana. It was there that the organism seemed to flourish as it did nowhere else.

Dr. Howard Morrow, of San Francisco, said he had had repeated opportunity to compare cultures of blastomycetes with those of the granuloma coccidioides, and he had found that they varied considerably. Both cultures, at the room temperature, had quite a characteristic growth, but the coccidioides grew in the shape of a thick mass, with a sharp edge, whereas the blastomycotic fungus, while it began similar to that of the coccidioides, after a few days developed radiating fibres which spread out and gave the appearance of a halo. The speaker exhibited some culture tubes which illustrated the difference in appearance between the two fungi. Of course, he said, they were closely associated, but this was simply one point of difference. In two of the cultures of blastomycetes shown, the fungus had been sent to him by Drs. Montgomery and Ormsby, of Chicago. The others were taken from a recent unpublished case of granuloma coccidioides.

Dr. Douglass W. Montgomery, of San Francisco, said there is no doubt that there is a marked difference between the two fungi under discussion. It is held by zoölogists that a genetic difference constitutes a marked difference. Genetically there is a marked difference between the fungi in these diseases. In the Illinois disease the micro-organism buds in the tissues. In dermatitis coccidioides, the Californian disease, the organism in the tissues is a capsule, with spores in it, and looks like canister-shot. The organisms are beautifully rounded and marked, with no evidences at all of budding, and with a life cycle in the tissues of their host, which is entirely different from what it is outside the body. Dr. Howard Morrow has grown both of these organisms (the Californian and the Illinois fungi) on the very same media, and under the same conditions, and even the fungi in the test tubes can be distinguished from one another, as the one shows a halo, and the

other forms a clump of fungus without any halo whatever. He has had no trouble in cultivating the Illinois micro-organism in California.

DR. OLIVER S. ORMSBY, of Chicago, said he simply wished to emphasize one or two points which it was impossible to include in the synopsis of the paper.

In reference to the patient referred to by Dr. Zeisler, who recovered in California, Dr. Ormsby said the case appeared to be one of generalized infection, similar to pyæmia, in which the deeper organs were not involved to any extent. That patient had received large doses of potassium iodide, which unquestionably had something to do with her recovery, in addition to the Christian Science and the change of climate.

Dr. Ormsby said that in some of the cases described in this review the infection was limited to the skin for some time but subsequently became generalized. In other cases the generalized infection occurred first, with the cutaneous manifestations months later. He was sure that the infection was carried by way of the blood, although evidences of that were not obtainable in all cases. The bone lesions in one of these cases were of two types: In one type there were erosions about the bone, while in the other there was a typical osteomyelitis of blastomycotic origin. The destructive effects of this organism, and its ability to cause death in a short time were remarkable. Four cases had been treated at the Cook County Hospital within a brief period. One, which began as a pneumonia, was rapidly fatal. Blastomycosis was really a very serious disease, and one that did not belong entirely to the dermatologist. It was important, he thought, that this fact should be emphasized. In the cases they had seen in Chicago the skin had been involved in practically all but one instance.

# THE THYROID AS A FACTOR IN URTICARIA CHRONICA

By Dr. M. L. Ravitch, of Louisville

This ten-minute article is a mere therapeutical suggestion of experience from observation of nine cases of persistent and rebellious chronic urticaria. We know well that as insignificant as is an attack of acute urticaria, so serious and obstinate to treatment is an attack of obscure and chronic urticaria that it may prove a very formidable affection and may torment the life out of a patient. In regard to its diagnosis, pathology, and treatment, it would be superfluous to annoy you with a recital of what is known. I only intend to discuss a more rational and not simply an empirical treatment. I do not pose as an authority. I merely want to state that by careful exclusion of all probable causes of chronic urticaria, we may narrow down to the real cause and, then, we may put chronic urticaria in the category of curable diseases. I may be contradicted by competent authorities, but then, even competent authorities may be wrong. I firmly believe thyroid extract to be a specific in a good many cases of chronic urticaria. Thyrotherapy had the same experience as the X-ray has now. When it was first brought to the notice of the profession, its therapeutical value was over-estimated. In dermatology, it was going to revolutionize the old regime. False and extraordinary claims were made as to its specificity in psoriasis, eczema, lupus, and other dermatoses. As loudly as it was praised at the beginning, so strongly it was denounced and abandoned afterwards. But conservative investigators were not discouraged by the events. Thyrotherapy was proven to be a very valuable therapeutical agent. In dermatology, Dr. Byrom Bramwell, Paschki, and Grosz strongly recommended it in psoriasis, ichthyosis, and lupus vulgaris.

As with a good many valuable therapeutical agents, it has its indications and limitations, though it was argued by some that in certain diseases, like eczema, it has a special effect, because it improved in general the circulation and not because of its specification; yet I am of the opinion that it has a far wider and deeper action. According to the opinion of a considerable number of pathologists, in some way not very well understood at present, the thyroid gland has the power of neutralizing poisons and products of auto-intoxication existing in the blood. In the Hygienic Laboratory in Washington, Dr. Reid Hunt has proven that very small amounts of thyroid will protect mice against poisoning by acetonitril; this I believe is the first definite instance in which any antitoxic action on the part of the thyroid has been definitely proven by experiment.

Leopold-Levi and de Rothschild (see *Compt. Rend. Soc. de Biol.*, Nov., 1906) also came to the conclusion that urticaria is not an uncommon expression of hypothyroidism, and that the cutaneous lesions are due to an acute intoxication. They cite certain cases of urticaria in women where thyrotherapy caused rapid improvement and cure. Mysterious as the thyroid gland is, so mysterious is its effect. One fact is established in my mind; as thyroid is useful in eczema of the aged where the gland has stopped secreting, so it is useful in obstinate cases of urticaria where the gland is more or less affected or functionally inactive. The connection between the thyroid gland and processes in the uterus has long been known. A good many disorders, particularly nervousness, have been justly attributed to its hypertrophy or atrophy. Abnormality of the thyroid in hysterical people is something more than an accidental accompaniment and that chronic urticaria is an auto-toxemia caused in some way by the abnormal condition of the thyroid is certain. Reasoning from the analogy that the thyroid is a much more active and necessary gland in women than in men and knowing that rebellious cases of urticaria are also found more in women than in men, my conclusion was that in the majority of cases, chronic urticaria was due to the disorders of the thyroid. In my own cases of chronic urticaria and cases seen with other

physicians, from two to four weeks' treatment addressed to neutralizing the toxins elaborated by the diseased thyroid gland produced at once remarkable improvement, and later on, cures. I want to emphasize that in atrophy or functional inactivity but not in very enlarged thyroid glands, desiccated thyroids in combination with nux vomica have been used, while in enlarged glands such remedies are to be given as will allay stimulation or diminish the secretion of the thyroid, such as thyroidectin (the blood of thyrodectomized animals), strophanthus, bromides, and atropin and X-ray.

You will notice that the last four remedies have been successfully used in chronic urticaria, and I attribute their success to their influence in checking or diminishing the abnormal secretion of the thyroid gland.

The Roentgen therapy seems to do better than drug medication. In my own experience and the experience of the well-known X-ray worker, Dr. Freund, and also others, the Roentgen treatment induced unmistakable benefit in all cases suffering from abnormal functions of the thyroid and urticaria due to oversecretion of the thyroid. Under the X-ray the thyroid was reduced in size, the nervous symptoms subsided, and weight was increased in almost every case. Improvement in some cases manifested itself in two weeks, and in two months the patients felt well enough to quit treatment.

As time does not permit me to describe my cases, I will only state that seven of my nine cases were women. I have also noticed, as is the case with patients with functional disorders of the thyroid, that my patients complained that they were out of order; that they experienced a certain indescribable feeling. I have also noticed that attacks of urticaria come on with the greatest irregularity and without appreciable cause. There being no assignable causes in most of the cases of obstinate urticaria to account for these attacks, one cannot help but think they must be purely toxic and that functional disorders of the thyroid were the cause of this toxic condition.

# HYDROA PUERORUM (UNNA)

By Dr. Marcus Haase, of Memphis, and Dr. Rose Hirschler, of Philadelphia

It seems fateful that eighteen years after Unna[1] so nobly defended the teachings of Bazin, your authors should find it necessary to appear before this international body and ask for the proper recognition of a work which so clearly defined the disease under consideration that it seems almost incomprehensible that the English and American authorities should have classed it as they have—under that horribly disfiguring dermatosis, hydroa vacciniforme.

Crocker,[2] under the general head of hydroas, speaking of dermatitis herpetiformis, says: "Unna's hydroa puerorum is a sub-variety," but under the title of hydroa vacciniforme seu æstivale uses it as a synonym of this disease, although in the text he does say that "it must be admitted that Unna's cases differ somewhat from the others in several respects, one important difference being that the vesicles and bullæ were quite superficial and left no scars and often the lesion stopped short at an early stage or remained as papules."

Jackson[3] classes hydroa puerorum under hydroa vacciniforme, and says: "It occurs mostly in boys and on exposed parts. . . . Vesicles are prone to become depressed in the centre and resemble vaccine vesicles. Scarring apt to result. . . . Clinical relation to bullous erythema and herpetiform dermatitis, though differing from them in leaving scars."

Pusey[4] uses the term hydroa puerorum as a synonym for hydroa vacciniforme without any qualification, and in a footnote says: "Hydroa was a name formerly given to many bullous eruptions; the only disease in which the name survives is hydroa vacciniforme."

Stelwagon[5] also uses the name as a synonym for hydroa vacciniforme, but in the footnote on literature quotes Unna's cases in the *Monatshefte* as questionable ones.

Hyde and Montgomery,[6] under the title of hydroa vacciniforme, use hydroa puerorum as a synonym, but in the text, classing it with hydroa æstivale and summer prurigo, say: "The eruptions differ from those of hydroa vacciniforme chiefly in being acuminate papules of a light reddish hue with minute vesicles, which are not umbilicated, and scarring is comparatively slight. The disease is found in girls, though less frequently than in boys."

All this after the title of Unna's paper was: "Concerning Duhring's Disease and a New Form of the Same."

Was all this confounding of two diseases due to his description of one case in which the majority of lesions appeared on the face, ears, and neck, or was his defence of Bazin's classification taken as a report of cases of that disease (hydroa vacciniforme) which he, Bazin, was the first to so clearly define?

The case reported below was seen by one of us with Dr. Unna in his private clinic in Hamburg in October, 1906. He said it was a typical case of what he meant by the term hydroa puerorum.

The previous history given was furnished by the mother of the child, a woman of much more than ordinary intelligence:

S. E. M., age eight, male, white, of English birth.

Family history unimportant. There is one other child in the family, a girl, who is unaffected.

Previous history: Had pertussis at seven months; rubella at three years; varicella at five years. No other contagious diseases. General physical condition good.

History of previous attacks: First attack began in infancy, spots occurring at different times, attributed by the mother to teething.

In the summers of the second and third years, he had several very severe attacks, blisters varying in size from a pinhead to a threepenny-piece, on all parts of the body except his head.

This occurred three or four times in the summer, one efflorescence succeeding another before the preceding one had completely disappeared, but these efflorescences were less severe than the original outbreak.

There would then be a period of quiescence lasting from two weeks to four months, when the lesions would again appear.

During the winter of his second year he had two mild but distinct attacks, and each winter since the same condition has been noted.

The eruption was less severe during his fourth and fifth years, but in both these years it appeared twice on the face, three or four spots occurring in that region, but healing much more quickly than those on the trunk and limbs.

Each year since he has had attacks, but none so severe as those that occurred during his second and third summers.

In August of this year, he had rather a severe attack, the lesions appearing first on the back and chest, then on the legs, arms, hands, and feet in the order named. Later three lesions appeared on the face, but these disappeared in three or four days.

On two occasions, mild acute attacks followed visits to the dentist.

The child is unusually quiet, not inclined to play just previous to or during the attack.

Present history, October 16, 1906:

Patient, a blond, appeared to be a fairly well developed child, fond of outdoor life, but of a nervous temperament; no lung or cardiac disease.

Upon examination, no scarring was found except one small pit upon the forehead, which the mother insisted was the remains of an infected varicella vesicle.

Present attack began on the 10th inst., with one small lesion on the right cheek, which when seen was covered with a pale yellow slightly adherent crust. On the 12th, four lesions appeared on the back, quickly followed by others, and at present they are now sparsely disseminated over the trunk and extremities, some thirty lesions in all. *No others appeared on the face, nor are there any on the ears or hands.* The lesions began as erythematous patches, irregular in outline, varying in size from a pinhead to a thumb-nail, accompanied by intense itching and burning. Within twelve to fifteen hours, minute tense vesicles appeared upon these erythematous

bases. These vesicles were decidedly superficial, easily ruptured through scratching, which relieved to a considerable degree the subjective symptoms. In the majority of instances, they coalesced and formed bullæ. They contained clear to a straw-colored serum, were not pustular, except when extraneously infected. Yellowish crusting followed. No ulceration. In a few days, crusts fell off and left red stains with *no scarring*. We saw no erythematous patches that remained as such. Biopsy made from lesion over left tendon Achilles.

October 17th, one new lesion on dorsum of fourth toe, right foot.

The crust on right cheek had fallen off, leaving a deep red stain. There was no pitting. Urinary analysis made—appended. October 18th, no new lesions appeared. An unsatisfactory blood examination was made October 17th. A second one done on October 20th. Both appended. When seen on October 20th, crusts from three of the first lesions occurring on the back had fallen off, leaving stains similar to that on the cheek. There was no scarring in any of these.

Crusting continued up to time patient was last seen.

The disease has only recurred twice since this attack. A moderately severe attack occurred in February, beginning on the eighth, lesions appearing first on the buttocks, quickly followed by a similar condition on the back, abdomen, and legs, in all about twenty-five bullæ.

An insignificant attack occurred on the 23d of July, confined to the extremities and limited to eight lesions, three on the outer side of right calf, two on left leg, and three on right forearm.

In neither of these attacks did any lesions appear on the face, ears, hands, or feet. The first attack this year lasted about eight days, the second one in July crusting and falling off in five days.

Histopathology:

Upon studying the sections made from the biopsy one is forced to the conclusion that the disease is an acute inflammatory affection, with destruction of its component elements rather than proliferative growth. Vesiculation is the ultimate

outcome of the process. The factors productive of the vesiculation must be of a less violent action than some of our vesicular diseases, as in no instance is there visible a sudden, sharp uplifting of the epidermis in toto, forming a solid, overhanging roof.

The serous exudation into the epidermis must be a slow process. There is seen through the prickle layer an intense intercellular œdema, the intensity varying irregularly throughout the whole depth of the rete, being of course greatest through the central area of the biopsy. The œdema is such that it stretches the protoplasmic processes to their utmost, frequently compressing the exoplasm, thus reducing the size of the cell. This is observed in the upper part of the rete. Again the compression has proceeded farther, so that in some areas the cell wall has given way, freeing the nuclei into scattered groups, allowing them to float in small spaces, which form the early start for small vesicles. This type is found in greater numbers in the upper rete layers.

As the intercellular fluid increases in amount and the protoplasmic bridges give way, larger vesicles are formed. The nuclei gradually break from their boundaries and float as part of the vesicular contents. Some of the epidermal cells resist the dissolving power of the serum, but are not able to retain their shape. They become pressed into long, narrow cells, some spindle-shaped with elongated or crinkled nuclei, and hang as bands downward from the roof, connect sometimes with the floor below or hang loose, or join with a nearby streamer, thus forming multilocular cavities.

The nuclei sometimes have their shape preserved. They are never œdematously swollen and are never ballooned. They are more apt to be crinkled and irregular.

The base of the vesicles may have a narrow or a broad zone of basement cells or none at all. The lateral walls of the large vesicles usually have their cells long and narrow. In the small vesicles the cells seem to have melted away, leaving but their nuclei, while the neighboring processes form their boundaries. The roof of the larger vesicles has always held firm, unyielding corneum and some portion of the granular layer, two rows of which are generally present; some of the

smaller ones have also several layers of undisturbed rete. There have been no nucleated corneus cells found. There has always been a clean sweep through the whole section of normal horny cells.

A very few vesicles have been found between the granular and horny layers, the granular layer appearing cloudy from œdema, taking the stain poorly. A few of the vesicles appear to be in the act of crust formation with exfoliation without causing much downward pressure.

In the peripheral regions of the sections beyond the vesicular areas the prickle cells have œdematous swelling without the intense intercellular pressure. Here the epithelial plugs seem rather broad and full, with no mitoses. In fact, there is no mitosis anywhere to be seen in the rete, and no evidence of any newly formed cells. The contents of the vesicles consist of granules and threads of fibrin. Intermingled in the meshes are the nuclei and an occasional isolated undissolved epithelial cell, minus its nutrient processes; also granular débris. The most marked feature is the multitude of mono- and multi-nuclear leucocytes. They swarm the vesicles, especially at their bases and in the very small amount of corium present.

After repeated attempts no eosinophiles can be found. Leucocytes are found everywhere. They roll and wedge themselves in from the germinal layer up through the granular stratum almost into the corneum. Mast cells are present throughout, being most conspicuous at the vesicular floor.

One scarcely would believe that scarring would be present, though the vesicles sometimes maintain the whole depth of the epidermis.

It would appear that there would be sufficient basal epithelial cells left to renew the broken continuity, preventing at least any breadth of scar. (Polychrome, Methylene Blue, Iron Hematoxylin and Eosin, Delafield's Hematoxylin and Eosin, and other stains used.)

It will be remembered that in Bowen's[7] cases many vesicles became depressed in the centre and resembled vaccination vesicles, and around the umbilicated centre there was often a ring of fluid and a dark red areola. Dark blue or black

centres due to the necrotic and hemorrhagic corium were seen through the overlying vesicles. Necrosed centres becoming converted into thick black crusts were detached with difficulty, leaving deep scars, "permanent variola-like." In sections from one of the biopsies he found that necrosis extended down throughout the entire epidermis and through the corium, ceasing a short distance only from the subcutaneous tissue. A second biopsy from the same case of Bowen's, consisting of a small primary vesicle without the typical central discoloration, showed a vesicle in the centre of the rete without the necrosis, as in the first biopsy. But this was not characteristic of the lesions. He says that as far as these sections indicate, "the disease begins as an inflammation in the epidermis and upper part of the corium in circumscribed areas, and speedily results in the formation of vesicles in the rete. In these lesions they do not end here, the epidermis and corium underlying, deep down, become necrotic, all of which show and give rise to the dark red centre seen in the well-developed lesion, and to the dark violet points as described."

In McCall Anderson's[8] two cases of hydroa æstivale the lesions were limited to the face, ears, neck, and hands, and the vesicles which broke with crusting left severe scarring, even to the point of contractures. Unfortunately there was no biopsy made in these interesting cases. However, here, as in Bowen's, there must have been a deep necrosis, much deeper than the epidermis.

In J. C. White's[9] article on hydroa vacciniforme, he claims that the lesions left scars and pits and that excoriations and crusts were present with the lesions; and he has observed other instances of children where the lesions were confined to the ears and backs of hands, characterized by umbilicated and necrotic conditions, recurrence, and cicatrices, and that these are typical of Bazin's disease, hydroa vacciniforme. In his article he quotes Duhring to have said: "I believe scarring may occur in dermatitis herpetiformis, but it is rare, especially in a marked form, and I regard such cases as peculiar—that is, where scars exist a year or two after the eruption had disappeared." White here also says that "Unna's hydroa puerorum is certainly a different affection."

Handford[10] reports a case of hydroa æstivale in which the disease was limited to the face and left scars, and mentions a case of Mr. Hutchinson's, described at a meeting of the Clinical Society of London, December 14, 1888, that had been under Mr. Hutchinson's observation from the years eight to twenty, and which, while disseminated over the whole body, was sparse on the trunk, worse on the hands and face, and especially severe on the ears, and "his face was scarred all over, as if from smallpox, and the ears were reduced to a gristle covered by thin scars." The patient was never wholly well excepting in cold weather.

Elliot[11] believes his case to be the same as Tilbury Fox's hydroa simplex, in which there was little crusting and no scarring. A biopsy of a freshly occurring lesion was made. In this section work the stratum corneum was broad and well defined, with loosened and separated layers, especially near the vesicles, but marked around "that portion of the sweat ducts which passed through it," and over some of these latter it was raised, forming vesicles. The nuclei were retained almost to the surface. The stratum lucidum was scarcely demonstrable, and the stratum granulosum was seen limited to a single layer.

The rete near the vesicle became acanthotic, more than doubling itself. The cells became long and narrow, slightly granular and somewhat loosened, nuclei occasionally absent, but as a whole they were well stained.

He speaks of its being an inflammatory reaction, but does not speak of the marked stream of leucocytes into the vesicles and surrounding areas.

In his summary he concludes "that the point of origin of these lesions is primarily in the epithelia of the sweat ducts just below the horny layers of the epidermis, extending from there to the rete; and that the secondary symptoms are those of inflammation seated especially in the papillary layer."

One can see that there are a number of differences between the histology of this case and that of ours.

In the specimens of hydroa puerorum no connection was seen between the coil glands and the vesicles.

In Gilchrist's[12] report of a case of dermatitis herpeti-

formis of Duhring, he says that it is apparent that the vesicles are formed gradually between the epidermis and the corium. That the changes have chiefly occurred in the upper part of the corium, which shows an invasion of the acute process. He speaks of first a few wandering polynuclear leucocytes in the epidermis, but "by no means numerous." In one or two places, especially near the large vesicles, a few vesicular spaces occurred in the epidermis, but connected with the vesicle below. No mitosis was present. Some of the nuclei were shrunken and appeared to be situated in a vacuole. No alterations were noticed in a sweat duct appearing to pierce it. On account of the pressure from the vesicle the cells of the overhanging epidermis were somewhat flattened.

Some eosinophiles were found in the vesicles. The corium was most markedly affected. Many polynuclear leucocytes were found here, as well as mononuclear cells and undoubted eosinophiles. These eosinophiles seemed to be prominent, "even under low power." As the stages grow later, the leucocytes grow in numbers, apparently being the main changes, but no corresponding growth of eosinophiles. Later still, the papillæ grow larger, obliterating the interpapillary spaces and increasing the size of the vesicles, with a corresponding increase of cells. "The greatest variety of cells is seen at the base of the vesicles."

In a brief summary there is noted that dilatation occurs first in the blood-vessels in the upper part of the corium, particularly the papillæ, serum exudation as evidenced by coagulated albumin, with emigration of polynuclear leucocytes, eosinophiles, and fibrin in the connective tissue. Then there is a massing of polynuclear leucocytes, chiefly in the upper part, with displacement of papillæ. As this increases, diapedesis of eosinophiles is more noticeable. This continues until sufficient to produce vesiculation.

Pitting and scars occur with this disease because the vesicle is entirely beneath the epidermis, which is simply raised in a mechanical manner by the inflammatory exudation beneath. The epidermis is in itself normal, although over the vesicle it appears flattened out. The process is an acute one, as seen by the polynuclear leucocytes. The

changes do not extend very deep into the corium. The glands are unaffected.

Gilchrist says that here the picture does not entirely agree with Unna's, although the changes have occurred in the corium in the papillary bodies, and the vesicles were formed beneath the epidermis. In this case he (Gilchrist) believes that the process was more acute.

Others have agreed in the report of the diapedesis of eosinophiles. It is certain that there are none present in the specimens we have of hydroa puerorum. It may be that the process, though acute, was, as has been said before, not so acute as to create the outpouring of eosinophiles, but sufficient to produce the outpouring of polynuclear leucocytes.

The findings of Gilchrist correspond more with our findings than the other men's in their hydroa vacciniforme.

The sudden stream of leucocytes and serum into the epidermal tissue would account for the preliminary erythema and swelling. It can be seen that deeply seated small vesicles may exist under a firm, horny roof, and still present grossly the appearance of papular lesions. The multiplicity of the vesicles may also be evidenced as true vesicles in groups, or grossly as isolated vesicles, while isolated there are microscopically more present.

Brooke,[13] who reports two typical cases (one in a girl) of hydroa vacciniforme, quotes from the report of Buri's[14] case, who in turn quotes Bazin's[15] original article describing the disease, as follows:

"Hydroa vacciniforme is a rare and little known affection. The majority of cases were taken for syphilis and scrofula. They were of long duration and resisted the most varied methods of treatments. Symptoms . . . appear first after an exposure to fresh air or to the rays of a powerful sun. Some feeling of malaise and loss of appetite often accompany the outbreak. The eruption often shows itself primarily upon the unclothed parts of the body, especially the nose, the cheeks, the hands, and later upon the other parts. Red patches are first noticed, on which transparent vesicles of herpes appear. From the second day the vesicles present a distinct dell; they soon lose their transparency, and at this moment they

resemble a variola or vaccine pustule; in a short time a crust forms extending from the centre towards the periphery. In some patients the numerous scars give a distinct impression of a previous variola, in others the sero-purulent secretion and the thick crust would lead one to the belief that the case was one of impetigo, did not a few outlying efflorescences in the course of development prevent such an error. The affection often drags on for months, owing to the development of constant fresh eruptions. In one case it lasted six months continuously. Relapses are frequently seen, originating from the changes in the temperature."

After the foregoing, we do not think there can remain any reasonable doubt that these are separate and distinct diseases.

Clinically there are but two similar features: first, that the lesions are grouped vesicular ones; second, they both occur in young males. There the similarity ends.

In hydroa vacciniforme the disease occurs almost exclusively on the face, ears, and hands. The grouped vesicles coalesce, form bullæ, become umbilicated with dark blue or black centres. The crusts are thick and black and are very adherent, and upon removal leave distinct ulcers, and the ultimate outcome of the process is variola-like pitting and scarring.

In our case of hydroa puerorum, the face was the region least affected, the trunk and limbs being the most seriously involved.

The grouped vesicles or bullæ were never dark, being from a clear to straw color. There was no umbilication. The crusts were light yellow and slightly adherent, and when removed left only deep red stains. There was never any pitting. All of this is true of the five cases reported by Unna, except one in which the majority of lesions appeared on the face.

In hydroa vacciniforme the heat of the sun, and to a less degree cold winds, are the exciting causes. This is not necessarily true in hydroa puerorum, as evidenced by the two attacks following visits to the dentist, and the attack which we were fortunate enough to witness, which began on October 10th, in exceedingly mild and pleasant autumn weather.

As to the histology of the two diseases, there is even a more marked difference than in the clinical pictures, as is shown by comparing the findings of those quoted with our own.

In Unna's article he describes hydroa puerorum as a form of Duhring's disease. Can this position be sustained to-day? We do not think so.

Few cases of Duhring's disease have been reported as occurring in children, none beginning in the first year. The youngest on record we believe to be three years of age, reported by Crocker.

Hydroa puerorum begins in the first year. In Duhring's disease, the lesions are polymorphous. In hydroa puerorum, the polymorphism is decidedly limited.

The duration of Duhring's disease is from three weeks to as many months. Hydroa puerorum is a disease of short duration, attacks rarely lasting over fifteen days.

In Duhring's disease, male and female are alike susceptible. In hydroa puerorum, only the male is attacked.

The difference histologically is much more marked, as is shown in Gilchrist's masterly description of his findings, and Unna[16] summarizes the histological condition as follows:

"The œdema and cellular infiltrations corresponding to a vesicular area of the skin whose chief seat is in the papillary body, the utterly passive behavior of the epithelium which only presents œdema and interepithelial blisters or is completely elevated by serum, and finally the complete absence of leucocytes."

In claiming for this disease a place in our nomenclature as a dermatological entity, we offer the following description culled largely from the original:

First, an acute erythemato-vesicular disease, preceded and accompanied by intense burning and itching.

Second, the vesicles coalescing to form bullæ.

Third, involution of lesions without pitting and scarring.

Fourth, the first attack occurring in the first year of life.

Fifth, recurrence of attacks independent of external influences.

Sixth, gradual lessening of attacks in extent, intensity, and duration.

Seventh, spontaneous disappearance at puberty.

Eighth, unrestricted as to any particular region.

Ninth, restricted to male sex.

Tenth, relatively normal health during attacks.

Eleventh, to this may be added the superficial character of the disease, the lesions being confined to the rete.

We acknowledge with thanks our indebtedness to Dr. Unna for allowing us to study the case, and to Dr. Carl Enoch, of Hamburg, for urinalysis and blood examinations.

### URINALYSIS

| | |
|---|---|
| Reaction | Acid |
| Specific gravity | 1.027 |
| Total solids | 6.29 % |
| Albumin | none |
| Sugar | none |
| Acetone | none |
| Bile pigment | none |
| Chlorides | .76 % |
| Phosphates | .243% |
| Uric acid and urates | .033% |
| Urea | 1.38 % |

Residue—sulphates, etc.

### BLOOD EXAMINATION

October 17, 1906:

The counting of the red blood corpuscles showed the normal number of 4,800,000.

The proportion of the red to the white blood corpuscles could not be ascertained, as in five preparations not one leucocyte was found on the counting chamber. Only in the sixth preparation one leucocyte was found outside the chamber.

The stained preparations did not show any difference from the normal, aside from the fact that we found that here also the number of leucocytes appeared diminished.

However, as the above finding may have possibly been accidental, I would recommend a second counting.

October 20:

| | |
|---|---|
| Hæmoglobin | 67% |
| Red corpuscles | 4,596,000 |
| White corpuscles | 8,000 |

There was no increase, rather a diminution of eosinophiles.

(Signed) Dr. Carl Enoch.

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# DERMATITIS COCCIDIOIDES

By Dr. Augustus Ravogli, of Cincinnati

When it was ascertained by Perroncito and later by Israel and Ponfick, that the presence of the streptothrix bovis or actinomyces was the cause of the disease, actinomycosis, affecting animals and man, a large field for research was opened, and other diseases were found resulting from the introduction in the skin of infectious parasites of a higher order. In fact, Poncet and Dor showed that madura-foot was due to a parasite, the streptothrix maduræ. The botryomyces was found in the horse and from it was communicated to man.

To the researches of Busse and Gilchrist we owe the discovery of parasites resembling yeast as a cause of the peculiar alterations in the diseased skin. They were included in the group of blastomycetes.

To the studies of Douglass W. Montgomery has to be credited the distinction of another form belonging to the same group, namely, dermatitis coccidioides, under which we class our case.

On November 18, 1905, there came under our observation an interesting case with cutaneous lesions of long standing and obscure nature. The man, J. Z., was then 51, married, with two healthy children. He had always been in good health; no history of syphilis or tuberculosis was in his family. He was a blacksmith and a foundryman by trade. His work necessitated putting his hands and arms in the fertilizer, made of crushed and pulverized bones, which is used in the foundries to put around the moulds to hold them steady for the iron casting. He referred all his troubles to an attack of grippe, which he had had two years previously. He first noticed that the skin of his hands and arms, especially on the extensor surface, was rough, hard, and scaly, and at the same time

troubled him with unbearable itching. Then papules appeared all over his legs, which were red and swollen, suppurated, and soon were covered with thick crusts. This peculiar eruption had in a short time invaded the whole extensor surfaces of both legs and feet. In different places round ulcerations were formed, with infiltrated edges of a bluish red color, with cauliflower-like granulations protruding from the honeycombed floor of the ulcer.

The condition of the epidermis of the fingers and the hands grew much worse, and diffuse ulcerations were formed in the interdigital spaces, near the finger nails and around the wrists, while the eruption extended to the arms. The ulcers were round, somewhat irregular, resulting from the coalescence of many ulcerated points.

Five months later the pustules invaded the back of the head, neck, and auricles, and only recently a patch had occurred on his nostrils involving the skin and the mucous membrane.

The affected skin was covered with yellow crusts, dry and firmly adherent. In some parts they covered a nearly normal epidermis, and over the deeper ulcerations they were bulky. From these lesions oozed a fluid and viscid secretion with an offensive odor.

When the patient called the first time, the whole skin of the hands and arms was scaly, infiltrated and thickened to such an extent that he could not open or close his hands. Several fingers showed extensive ulcerations on their dorsal and interdigital surfaces. The nails were dry, chalky, and brittle. Extensive round ulcerations, with thick edges, were seated on both wrists, on the external surface of the carpo-ulnar region.

In order to establish a diagnosis, a piece of crust crushed with water was placed under the microscope. It showed an enormous quantity of small round bodies, which greatly resembled coccidia, and for this reason we called the disease dermatitis coccidioides.

Pieces of the crusts and the secretion from the pustules were inoculated on maltose-agar in Erlenmeyer flasks, and a luxuriant mouldy growth was obtained. This showed,

under the microscope, spores, resembling those which we had found in the fresh state.

They were round, had thick capsules, and contained a granular substance. The bottom of the culture showed a thick vegetation of mycelia with strong articulated filaments and large spores.

It was of interest to note that in the smear-preparations, when mounted in Canada balsam, the spores had all disappeared, while on the dry glass around the balsam they were quite numerous.

This observation prompted our therapeutic application, namely, after bathing the diseased skin with a 1 to 1000 solution of bichloride of mercury, we had it covered with Peruvian balsam in castor oil. Under this treatment the ulcerations and the pustules healed up and the skin returned to its normal condition.

The patient then returned to his occupation. The cure, however, did not last long, for after a few months, on November 19, 1906, he came back with more lesions on his legs, especially around the knees. He was treated again, the eruption almost entirely disappearing, but he had lost flesh, had frequent attacks of fever, and had become very weak mentally. He remained under our treatment until the eruption had healed and then returned home. He died on May 30, 1907, his physician giving the diagnosis of consumption. While the patient was under our treatment he also took large doses of iodide of potassium, from which no benefit was derived, so far as the general symptoms were concerned.

*Histology.*—A piece of the ulcerated skin was removed from the knee, and hardened in alcohol. It showed the horny layer of the epidermis to be first affected by the coccidia. They insinuate themselves between the layers and detach the cells, which are then reduced to hard dry scales. The spores are produced in enormous numbers. The cells of the deeper layers of the epidermis do not remain indifferent to the invasion of the foreign elements, being greatly enlarged, thickened, and hypertrophic. In some places the epidermic cells appear to be multiplying and surrounding the coccidia by pearl-like formations, which recall the pearls found in

cancer. Among the epithelial cells are polynuclear leucocytes with coccidia and detritus, and often also giant cells, some of them containing the organisms,—demonstrating their phagocytic properties. In other places the coccidia are forcing their way through the epidermis and have formed wedge-like masses penetrating the deeper layers. The irritation caused by the presence of the coccidia is responsible for the epidermic proliferation and the hypertrophy of the connective tissue elements of the papillæ.

Plasma cells, arranged in dense rows, are remarkable for their number. There are present also numerous small abscesses filled with remains of degenerated cells, detritus, and coccidia.

The coccidia may also invade the cutis by the way of the hair follicles. Our microscopical specimens show them invading the follicle of the hair and through its shaft entering the meshes of the derma. The latter is infiltrated with the organisms and resembles somewhat the disposition of the infiltrating elements in cutaneous cancer. The coccidia are found between the connective tissue of the skin and in the glands; the elastic fibres have to a great extent disappeared.

The case as reported, with the presence of coccidia in the different layers of the skin, shows that these micro-organisms are the morbid factor producing the disease.

This subject was elucidated by the researches of Busse[1] and Gilchrist[2] and an etiological relationship established between the parasites and the diseased skin. The organisms were called blastomycetes, and the skin affection blastomycosis.

After the exhaustive works of Buschke[3] and later of Friedrich Krause,[4] in which the literature on the subject of blastomycosis is reviewed, it would be superfluous to return to the same cases again. We can say, however, that many of

[1] Busse, O. "Die Hefen als Krankheitserreger." *Arch. f. Derm. und Syph.*, Bd. 47.

[2] Gilchrist, T. C. The Johns Hopkins Hospital Reports, 1896.

[3] Buschke, A. "Die Blastomykose." *Arch. f. Derm. und Syphilis*, Bd. 68–69, 1903–1904.

[4] Krause, F. "Die sogennante Blastomykose der Haut." *Monatshefte f. prakt. Derm.*, Bd. 41, No. 4, 1905.

these cases have died and that the internal organs were affected with metastatic foci, containing the same parasitic elements.

In all the cases the parasites had gained an entrance through the skin. The latter was infiltrated with yeast cells and riddled with abscesses. Giant cells were present in the papillary layer, and the epidermis was proliferated.

In the report by Curtis,[1] of Lille, the affection occurred in the form of large nodes resembling sarcomatous tumors, which were found to contain the yeast elements. This patient died one year later with nervous symptoms.

Roncali[2] referred to a case of an adenocarcinoma of the intestine in which yeast elements were present and which had nothing characteristic of a carcinomatous nature. These parasitic elements were thought to be a form of saccharomycosis, which localizes at first in the skin, and then by metastasis invades the internal organs.

It so happened that the so-called *protozoic diseases* of Posadas, Wernicke, Rixford, Gilchrist, D. W. Montgomery, and others, Busse's and Curtis's *saccharomycosis hominis*, and Gilchrist's, Hyde's, and F. H. Montgomery's *blastomycetic dermatitis* came to be considered as various manifestations of the same disease. In the opinion of Stelwagon,[3] the organisms which have been isolated in the various cases, although they differ in minor respects, morphologically and biologically are so closely related as to justify their classification under one group. The yeast elements can grow in the skin and at times produce a strong inflammatory reaction with the formation of giant cells, while at other times they may cause only a limited tissue reaction as in other mycoses.

D. W. Montgomery, A. Ryfkogel, and H. Morrow[4] have strongly contended that dermatitis coccidioides should be

[1] CURTIS, F. "A propos des parasites du cancer." *Compt. Rend. de la Soc. de Biologie*, 1899, p. 191.

[2] RONCALI. "Die Blastomyceten in den Sarcomen." *Zentralblatt f. Bakt. und Parasitenkunde*, Bd. xviii., 1895.

[3] STELWAGON, H. W. *Treatise on Diseases of the Skin*, p. 1072.

[4] MONTGOMERY, RYFKOGEL, and MORROW. "Dermatitis Coccidioides." *Journ. Cutan. Dis.*, Jan., 1903.

MONTGOMERY and MORROW. "Reasons for Considering Dermatitis Coccidioides an Independent Disease." *Ibid.*, Aug., 1904.

considered an independent disease, distinct from blastomycosis on account of its different clinical features and biological properties of the fungus. That of dermatitis coccidioides grows by endogenous spore formation, while that of blastomycosis grows by budding.

Buschke, too, would be more inclined to consider blastomycosis as resulting from another order of parasite, more closely resembling the oidion, and he classified it as oidiomycosis. The difference between the two types, according to Buschke, would be in their clinical manifestations, since in blastomycosis there are formed small tumors of the skin which become ulcerated, and infection is often carried to the lymphatic glands, while dermatitis coccidioides begins as a diffuse infiltration of the skin, with small abscesses and papillary growths surrounded by an area of infiltration showing a tendency to progression.

Buschke, D. W. Montgomery, and ourselves have found also a therapeutical difference: in the first the internal use of the potassium iodide is beneficial, while in the second it is not.

The blastomycotic affection begins as a spot, or as a group of papules, or as nodules or pustules, and from the initial forms an infiltrated base is developed which proliferates in a warty manner resembling somewhat tuberculosis verrucosa cutis or cauliflower-carcinoma. The central portion softens, forming abscesses. The color of the affection is brown or bluish and cyanotic, the abscesses and the resulting ulcerations discharge freely, and with a little pressure small drops of a purulent substance can be squeezed out. Ulcers soon form and the lymph vessels and glands are involved early. In our case, however, we had a diffuse infiltration of the skin with superficial papillary nodules and a conglomeration of small abscesses. The spores contained in the secretion are capable of inoculating the disease in other places.

Subjective symptoms are usually those of inflammation of the skin. In our case the patient was suffering from an unbearable itching.

The extension of the disease is in a chronic way, taking months and years, and it can be mistaken for tuberculosis

verrucosa cutis, acne abscedens, or lues. At times there are acute recrudescences, accompanied by mild fever and malaise. In the beginning there are no systemic troubles, but gradually the disease metastasizes to the internal organs—lungs, liver, kidneys, periosteum, serous membranes—and then the symptoms assume a much more serious aspect. The patient gradually becomes weak, has fever, an irregular cachexia and mental derangements, the disease terminating in death.

In the blastomycotic form recoveries have been claimed, but in dermatitis coccidioides it seems that no case has so far recovered. The disease apparently has a deleterious influence on the nervous functions. In the subject of our study and in another of botryomycosis the psychical functions of the patients were greatly impaired.

The histological examination has shown in both affections great epidermic hyperplasia and groups of epithelial cells recalling the cancer pearls. Miliary abscesses are present as well as an inflammatory infiltration of leucocytes, eosinophiles, and plasma cells. In the abscesses are found groups of spores with a double contour. The presence of giant cells shows the introduction of the foreign elements.

It is indeed an attack of saprophytes on the tissues of the skin. These saprophytes are cultivated on the culture media of the yeast, as glycerin-agar and maltose-agar, where they vegetate very luxuriantly. It seems that they need sugar for their development. In the culture they show strong articulated mycelial threads with short sprouts from their sides.

*Etiology.*—In the case of Buschke, the remarkable etiological point was that the man handled corn covered with brown powder. The corn was affected with smut and several horses that had eaten it had died. Hyde refers to the frequency of blastomycosis in individuals who handle manure. In the case of D. W. Montgomery the man had often slept in box-cars where moulds and dirt are prone to accumulate. In my case the man had his hands in the fertilizer, which is made by drying the carcasses of animals and then pulverizing them. A little of this powder examined under the microscope was found to contain spores which bore

a great resemblance to those found in the diseased skin. Cultures made with the same fertilizer powder after twenty hours produced an abundant vegetation of moulds. These were transplanted to a tube of nutrient gelatine which soon became turbid, liquefied, and contained masses of mould. Under the microscope were seen a great many spores with double contour, some budding. A small quantity of the liquefied gelatine was injected under the skin of a guinea-pig, which twenty-six hours later died. Its blood was fluid and dark and contained spores of the mould.

Sanfelice [1] isolated from the juice of fruits a yeast which he called saccharomyces neoformans, which, inoculated into small animals, caused morbid symptoms and death. Lydia Rabinowitsch [2] found seven varieties of yeast, which produced morbid symptoms in white mice and rabbits. Mafucci and Sirleo [3] isolated a variety of yeast which is pathogenic for the guinea-pig.

With the inoculation of all these pathogenic yeasts there have been produced infiltrations and ulcerations of the skin, with subsequent involvement of the lymph glands and internal organs. They have given origin also to tumors of the sarcoma type which are formed by the yeast cells.

The moulds act on the animal as morbid elements. Some moulds inoculated into the tissues do not produce a local reaction at the place of inoculation, but they soon develop in the fluids of the tissues and in the blood when they prove fatal. In other instances the mould may remain limited to the place of inoculation and the affected patch can be removed surgically, recovery following, but usually the spores are taken up by the lymphatics and by the lymph glands, or by infection through the blood are carried to the internal organs where infiltrated nodules and suppuration are produced.

[1] SANFELICE, F. "Contribution à la morphologie et à la biologie des blastomycetes qui se developpent dans les successeurs des divers fruits." *Ann. de Micrographie*, 1895, No. 10.

[2] RABINOWITSCH, L. "Untersuchungen über pathogene Hefearten." Quoted by Buschke.

[3] MAFUCCI, A., and SIRLEO, L. "Osservazioni ed esperimenti intorno ad un blastomycete patogeno con inclusione dello stesso nelle cellule dei tessuti patogeni." *Il Policlinico*, 1905, p. 138.

In Ward C of the Cincinnati City Hospital we have still under our care a somewhat similar case of dermatitis coccidioides, in a colored man who for months had been working in the sewers and wearing mouldy boots during this time. He was covered with pustules and small abscesses from his feet to his thighs. The contents of the pustules showed a great many round coccidia-like bodies. All pustules and abscesses when healed leave deep whitish scars.

According to the experiment of Buschke, the yeasts find their way into the system through the skin by rubbing or by introduction into the layers of the epidermis through small wounds. In the cases referred to by Marzinowski and Bagrow[1] the blastomycetes effected an entrance through the hair follicles.

In both our cases the introduction of the coccidia occurred largely through the hair follicles. The introduction may also take place through the mucous membranes of the nose and of the conjunctiva and even through the mucous membrane of the intestines. There was found also an embolic condition produced by the presence of the blastomycetes when affecting the peritoneum, and an *ascites chylosa* was the result of the occlusion of the *chylifera*.

Micro-organisms of a higher organization belonging to the order of the yeasts or of the moulds, especially under certain conditions of the atmosphere and of the animal organism, morbidly affect the animal body and cause local alterations of the tissues with pus formation. A blastomycetic septicæmia as a result of metastasis, with growth of spores in the blood and in the fluids of the tissues, has also been proved. From the deleterious results in our case we must maintain that a blastomycotic infection occurs along with alteration of the fluids of the tissues, which, carried in the circulation, affect the serum of the blood, as in any other infectious disease.

That the physical condition of the individual offers more or less propitious ground for the development of these patho-

[1] MARZINOWSKI und BAGROW. "Die Blastomyceten und ihre Beziehung zu Hautkrankheiten." *Arch. f. Derm. und Syph.*, Bd. 86, Nos. 1 and 2, 1907, p. 226.

genic organisms is made clear by the observation of Ehrmann[1] in a diabetic workman employed in a yeast factory, who was suffering with an extensive pustular eruption. In the pustules, yeast cells were found, which, when inoculated in the same man, produced new pustules, but when inoculated into a healthy man gave no result.

Recapitulating, we have a group of diseases produced by organisms which are introduced into the skin, either by abrasions or by the natural pores, and are taken from animals, grains, or fertilizers.

As regards their nature, they are infectious, with a chronic course which lasts for months and years. They have often shown themselves in repeated attacks, and the first place to be affected is the skin, in which the affection remains localized for a long time, but in many cases soon spreads to the contiguous mucous membranes, and later, by metastasis through the blood or through the lymph channels, affects the lungs, liver, kidneys, periosteum, and nervous system. The majority of the cases terminate fatally, but in some it would appear that tuberculosis assists in hastening the end.

Owing to the varieties of the oidia, clinical differences arise, and although the types are related among themselves, as at first maintained by D. W. Montgomery, they show wide variations nosologically and mycologically. For this reason and because its parasite more closely resembles a coccidium, we have reported our case under the name of dermatitis coccidioides.

### *Discussion*

Dr. Douglass W. Montgomery, of San Francisco, said he could not make out the coccidioides organisms in the microscopic sections shown by Dr. Ravogli. The organisms in granuloma coccidioides specimens are very distinct. They are capsules with a beautiful contour, encasing spherical bodies.

[1] Ehrmann, quoted by Buschke, *l. c.*

At 12 M. the President announced that the time had arrived for the executive session. At this time it was customary to elect the President of the succeeding Congress and select the place of the next meeting. This was the only link between succeeding sessions of the Congress.

PROF. ROBERT CAMPANA, of Rome, Italy, in a few appropriate words, named Rome as the next place of meeting. He thanked his colleagues in America for their hospitality and expressed the hope that Rome, the capital of the world, would be selected for the next place of meeting, and that he would see them all there.

For President of the next session of the Congress, Prof. Campana proposed the name of Prof. Thomas De Amicis, of Naples, Italy, who was at present one of the Honorary Presidents of the Dermatological Section of the American Medical Association. The time of the next Congress was to be designated by a committee appointed by the new President.

DR. J. NEVINS HYDE, of Chicago, in seconding the nomination of Prof. De Amicis as the President of the next Congress, and Rome as the place of the next meeting, said the opportunity to do this gave him much pleasure, as he had great respect for his colleagues in Italy. He had a vivid recollection of the last meeting of the Congress in Berlin, when he presented, on the part of the American Dermatological Association, an invitation to the Congress to come to New York, not without doubts as to how it would be received. At this moment our good friend and distinguished colleague, Prof. Neisser, arose and most cordially seconded the invitation. It was with great pleasure, Dr. Hyde said, that he seconded the nomination made by Prof. Campana.

It was thereupon unanimously decided that Prof. Thomas De Amicis, of Naples, Italy, should be President of the next Congress, and that the place of the next meeting should be Rome, Italy.

*Adjournment at 1 o'clock*

*End of Third Day*

## FOURTH DAY, THURSDAY, SEPTEMBER 12TH

### CLINICAL DEMONSTRATION OF CASES, 9–11 A.M.

#### A Case for Diagnosis: Possibly Lichen Ruber Acuminatus

PRESENTED BY DR. WILLIAM B. TRIMBLE, OF NEW YORK

The patient, a woman, aged forty-seven; single, born in United States, has had the disease for twelve years. The family history was negative. She had several brothers and sisters, all of whom were living and healthy, with no tendency to cutaneous disease.

The affection began as a somewhat generalized papular eruption which itched intensely. It progressed, and at the time of presentation the whole integument was affected. The skin was dusky red in color, much infiltrated and abundantly scaly; the scaling was branny in character. On the legs could be seen numbers of acuminate papules; but these were not present on other parts of the body. The forearm showed quite a marked pigmentation, with some keratosis. This might be due to arsenic, as the patient had taken this drug, for long periods of time, during the last ten years.

*Histopathology.*—The epidermis was somewhat thickened, especially the granular and horny layers. The former was unusually distinct in places, containing many coarse granules; the latter showed more of a hyper- than a parakeratosis, although here and there a few nuclei could be distinguished.

The majority of the rete pegs were flattened out. There was a diffuse, rather dense subepidermic infiltration of round and plasma cells, which in the deeper layers of the cutis had a perivascular disposition. Some of the vessels showed a marked thickening of the walls. There was a moderate increase of fibroblasts, and a mucoid degeneration was present about the coil glands.

**A Case for Diagnosis**

PRESENTED BY DR. GEORGE HENRY FOX, OF NEW YORK

Male, forty years, married; U. S.; physician. Patient's nose was swollen for two years, following explosion of an alcohol lamp, and the tip was drawn in as a result. A year ago a slight injury was followed by exudation, crusting, and moderate itching, an eczematous condition of the upper lip. There was a congenital deformity of the uvula. Calomel injections and potassium iodide, 150 grains daily for six weeks had little if any effect. At a meeting of the New York Dermatological Society in May, 1907, the diagnosis of syphilis was rejected. Some thought the lesion tuberculous. Subsequent microscopic examination had excluded the diagnosis of tuberculosis and malignant disease.

DR. S. POLLITZER, of New York, said that rhinoscleroma had been suggested in Dr. Fox's case, but the diagnosis had been rejected on the results of a biopsy.

DR. BOLESLAW LAPOWSKI, of New York, said he thought the lesion was of specific origin. He had had the patient under his care for a time, and marked improvement had followed the use of calomel injections.

DR. H. HALLOPEAU, of Paris, suggested animal inoculation tests to help clear up the diagnosis.

DR. ALEX. RENAULT, of Paris, thought the lesion was the result of a mixed infection—syphilis and tuberculosis. The fact that anti-syphilitic treatment had had no effect proved nothing to him.

PROF. THEODOR VEIEL, of Cannstatt, Württemberg, thought the lesion was syphilitic. He recalled a somewhat similar case which failed to heal under inunctions, but which improved after injections of albuminate of mercury. He also suggested the old method of treatment with Zittmann's decoction.

DR. FOX, in closing the discussion, said the improvement in the lesion after the use of calomel injections, to which Dr. Lapowski had referred, had been very slight and by no means sufficient to indicate a specific origin of the disease.

**Case of Prurigo Ferox (Besnier's Diathetic Prurigo)**

PRESENTED BY DR. JAMES C. JOHNSTON, OF NEW YORK

Man, aged forty-six. When first seen two years ago, body was covered from head to toe by the eruption. The skin was enormously thickened, pigmented and marked by scratching. The patient stated that he had not been free from violent itching for several years. Impetiginous and eczematous complications were frequent. A process of papulation could be made out on the diffuse infiltration by means of the scratched tops of the papules.

Under treatment by elimination and diet the eruption subsided somewhat and the discovery was made that relapse begins with an œdematous infiltration covering fairly large areas on which vesico-papules appeared, their tops being immediately abraded by rubbing. The sites of election were face and flanks. After reaching a certain point, regression ceased and it seemed impossible to influence the process in any way until, acting on a theory of disturbance in the intermediary proteid metabolism, extract of the whole fresh thyroid was administered hypodermatically. Improvement began shortly and the patient was now practically well.

**Case of Prurigo Ferox**

PRESENTED BY DR. JAMES C. JOHNSTON, OF NEW YORK.

Man, aged fifty-six. Lesions to all intents the same as in the preceding case except that they were confined to face, neck, and hands. Under diet, tar locally, and thyroid nucleoproteids, the condition greatly improved.

(The two cases are reported more fully in the paper of Drs. Johnston and Schwartz in the Transactions of the Congress.)

**A Case of Gangrene of the Toes Due to Syphilitic Endarteritis, Simulating Raynaud's Disease**

PRESENTED BY DR. HOWARD FOX, OF NEW YORK

Patient, æt. twenty-eight; married; U. S.; electrician.

Seven years ago he had a hard genital sore lasting a month and followed by general eruption. Wife is said to have contracted the disease from her husband three months later. Patient practically refused treatment. One child born before the disease was contracted is healthy. Another child

born after disease was contracted had "snuffles" and sores on the feet as an infant. Wife had since given birth to an eight months' dead child.

Two and one half years ago all the toes of left foot (except fourth) became black and withered and were amputated. Two months later portions of great and first toes of right foot became extremely painful and black. Two years ago symptoms of "dead fingers" in first and second fingers of right hand and fourth and fifth of left hand. Later right unilateral iridoplegia which persisted to present time. Urine showed heavy trace albumin. Although case had been considered by many to be one of Raynaud's disease, the demonstrator looked upon it as one of syphilitic endarteritis of the peripheral vessels for the following reasons: History of chancre, followed by eruption and probable infection of wife and child, lack of absolute symmetry in the "dead fingers"; the excruciating pain; the unilateral iridoplegia and almost complete cure under antisyphilitic treatment (injections of salicylate of mercury). (Case was reported in *Med. Review of Reviews*, May, 1907.)

### A Case of Tuberculide

PRESENTED BY DR. BOLESLAW LAPOWSKI, OF NEW YORK

Man, forty-one years of age, tailor by occupation. Ten years ago he had a "pimple" on his penis, which disappeared in a few days. He did not remember any secondary symptoms on either skin or mucous membranes. The present eruption began about fourteen years ago on the face, coming and going and spreading gradually downward; his body was never free from it for the past eight or ten years. Each lesion began as a "pimple" with a white centre, from which serum or matter could be expressed. If not scratched the papules dried and scabbed, the scab falling and leaving a depressed opening; there was no itching. The eruption was scattered over both lumbar regions and on the flexor surfaces of the upper and the lower limbs in rings and half rings, which on healing left pea-sized scars, without any pigmentary border on the abdomen, while on the lower extremities there were pigmentary spots. Some had dry blood scabs, on removal of which punched out bleeding ulcers appeared, neither deep

nor dry enough for a tuberculide. Several months ago he had an urticarial and impetiginous eruption, which gradually disappeared, leaving the original lesions but little changed. The patient was presented before the Section on Dermatology of the New York Academy of Medicine in October, 1906, with the demonstrator's diagnosis, which was concurred in by some of the members present while others regarded it as a syphilitic eruption. Since that time the patient had been treated with inunctions, injections of mercury (salicylate and calomel), and large doses of potassium iodide, with no permanent result. The eruption would improve, the papulo-tubercles would be absorbed, but not entirely, and at the same time a new eruption would appear running its course and leaving scars. Lately atoxyl injections were tried without any result.

Dr. Joseph Zeisler, of Chicago, thought the case shown by Dr. Lapowski belonged to a class of cases that the French had designated folliclis, which the speaker said did not mean much to him.

### A Case of Miliary Tuberculosis of the Skin and Mucous Membrane

Presented by Dr. Boleslaw Lapowski, of New York

R. S., single, twenty-two years old, no personal history. The internal organs were normal excepting the spleen which was slightly enlarged. Two years ago a small tubercle appeared on the right lower lip, and since that time the disease progressed involving the skin of the upper lip, right cheek, chin, and mucous membranes of the mouth. The patient had been treated before he came under the care of the demonstrator with various caustic preparations (the visible scars were remnants of their application). Since then a creosote and carbol plaster (Beiersdorf's) was used and internally creosote pills.

On the upper lip, chin, lower lip, and corners of the mouth there were ulcers of various sizes from a pea to a penny. The floor of the sores was studded with pinhead-sized ulcers covered with grayish discharge; edges raised and moth-eaten. Among the sores were scattered scars of former lesions. In the scar tissue were pinhead-sized tubercles.

### A Case of Tuberculide

PRESENTED BY DR. BOLESLAW LAPOWSKI, OF NEW YORK

Girl, fourteen years old. When nine months old she had measles (seen by Dr. Koplik). At the same time she developed on her nose and forehead a few "pimples." Three months after she had chicken pox (?) on the face and extremities. A little later diphtheria (Koplik) and she lost at that time her voice, which, however, soon after returned. At six she had "pimples" on her face and several years later on her hands. At that time the school doctor cauterized these lesions, probably with carbolic acid. At eleven she suffered from some fever eruption (scarlet). Since that time up to the present she has never been entirely free from an eruption, a "pimple" appearing here and there, which the patient would scratch and after a few weeks it would disappear leaving a scar. Scars were visible on her face, arms, dorsal aspect of both hands and scalp.

On dorsal aspects of both hands and extensor surfaces of both forearms, on forehead and partly on the chest, were pin-head- to millet-sized tubercles with necrotic centre reaching down deep into the skin. The necrotic cluster was sharply cut out, with even edges.

### A Case of Pityriasis Rubra Pilaris (Devergie)

PRESENTED BY DR. S. POLLITZER, OF NEW YORK

Male, aged twenty-five, born U. S. of German parents. General health good. Cutaneous affection was present since early childhood and never entirely well though varying in extent at times; at present moderately severe. Had been under treatment by many dermatologists in New York but disease was absolutely refractory, even prolonged X-raying on selected regions being without any effect. Patient had been presented before the American Dermatological Association and the New York Dermatological Society with unanimity of diagnosis. It was regarded as a typical severe case.

PROF. GAUCHER, of Paris, said the long duration of the disease spoke against pityriasis rubra pilaris, while the appearance of the fingers and nose favored it.

PROF. WOLFF, de Strasbourg, a dit qu'il considérait l'affection

comme un pityriasis rubra pilaire. La longue durée de la maladie n'entrait pas en ligne de compte. Il a eu deux cas qui ont presenté une durée analogue. L'un des cas était encore alors en traitement à la Clinique de Strasbourg. Il s'agissait d'une jeune fille chez laquelle la maladie avait commencé à l'âge de sept ans et qui avait alors vingt six ans, ce qui fait une durée de dix neuf ans.

Dr. William A. Pusey, of Chicago, said that as Dr. Pollitzer had asked for therapeutic suggestions, he wished to refer to a practically identical case of pityriasis rubra pilaris in which very assiduous treatment with X-rays carried on for a period of about a year had had no beneficial effect.

Dr. Arthur Whitfield, of London, said he was not quite willing to accept the diagnosis in this case. On the back, especially, as well as in other locations, the lesions showed a typical gyrate and ringed extension. He knew of no case of pityriasis rubra pilaris that had ever been described with such a method of extension. In Dr. Pollitzer's case the palms were absolutely unaffected, whereas in pityriasis rubra pilaris the palms as well as the nails were usually involved. The only locations that were suggestive of pityriasis rubra pilaris were the phalanges on their dorsal aspect, and even then it was a diffuse scaling with some blackening of the follicles rather than a primary follicular hyperkeratosis, and if one took into consideration the very long duration of the disease and the various methods of treatment that the patient had undergone, the appearance of the lesions was not surprising. The speaker said he regarded the case as one of inveterate psoriasis occurring in a very young child and lasting a long time.

Dr. Joseph Zeisler, of Chicago, in reply to Dr. Whitfield, said that in his opinion the case shown by Dr. Pollitzer was an absolutely classical one of pityriasis rubra pilaris of Devergie. The appearance of the end of the nose was absolutely typical of that disease, and he considered the diagnosis of psoriasis untenable for a single moment.

### A Case of Lichen Planus Annularis

Presented by Dr. Jerome Kingsbury, of New York

Patient was a school girl nine years of age; born in U. S. of Russian parentage. She was anæmic, nervous, and poorly developed.

The eruption was quite general and of eight weeks' duration. There were many characteristic lichen papules on the forearms, buttocks, and thighs but the lesions of interest were annular ones found on the trunk and upper extremities. These varied in diameter from 1 cm. to 4 cm. The largest were on the chest and abdomen and showed some fine grayish scaling. In addition to the skin lesions there were patches on the oral and vaginal mucosa.

PROF. WOLFF, of Strassburg, thought that in the case shown by Dr. Kingsbury there was no other diagnosis possible than lichen ruber annularis. The only diseases to be differentiated were granuloma annulare and porokeratosis, but the presence of well-characterized white papules on the inner surface of the cheeks determined the diagnosis of lichen planus.

**A Case of Scleroderma and Sclerodactylitis**

PRESENTED BY DR. J. A. FORDYCE, OF NEW YORK

M. S., æt. fifty-three, widow, born in Russia. The patient had been under observation since May, 1906. When first seen, she gave the following history: The disease began four and one-half years previously by a "tightening" and glazed appearance of the skin on the backs of the fingers, the hands and lower third of the forearms. Six months later the contractures took place, beginning with the ring finger of the left hand. Lesions about the nails soon followed, resulting in an ulcerating paronychia, one finger after another becoming affected accompanied by considerable pain and soreness. A radiogram made shortly after her admittance to the clinic showed atrophy of the terminal phalanges. The skin covering the fingers, hands, and lower third of forearms was atrophic and closely adherent to the underlying structures, presenting a typical picture of scleroderma.

In addition to the above, the patient's legs were swollen from hard œdema, her toe nails presented dystrophic changes, and on the plantar surface of the left great toe, there was the suggestion of a beginning perforating ulcer. Over her forehead and malar bones the skin was drawn and tight and on her occiput there was a round red scaling lesion about the size of a silver dollar which resembled lupus erythematosus.

### A Case of Acne Vulgaris and Adenoma Sebaceum of the Chest

PRESENTED BY DR. J. A. FORDYCE, OF NEW YORK

The patient was a young man, about twenty-one years of age, who had a congenital heart lesion, giving rise to persistent cyanosis. He had a well-marked acne of the face and trunk. In addition to the multiform lesions of acne, he had an enormous number of milium-like lesions over the chest, back, and face. They were larger, however, than the usual milium, and each had a central punctum similar to those seen in adenoma sebaceum. The lesions were unlike those seen in the usual type of the so-called adenoma sebaceum of the face, where they are more or less crimson in color due to the telangiectases. Here they were more translucent and different from the dead-white of the ordinary milium lesion. The histological examination showed them to be made up of sebaceous glands much increased in number over their normal condition.

DR. A. R. ROBINSON, of New York, said he did not think the milium-like lesions on the chest were examples of adenoma sebaceum. He regarded the lesions as follicle horn cysts or as milium bodies formed from an outgrowth of the outer follicle sheath in the upper third of the follicle.

### Two Cases of Lupus Erythematosus

PRESENTED BY DR. S. POLLITZER, OF NEW YORK

These cases with lesions of the face, almost cured, were presented to show the effect of treatment, three and five months, respectively, with five per cent. salicylic and soap-lead plaster.

### A Case of Argyria

PRESENTED BY DR. DAISY M. ORLEMAN-ROBINSON, OF NEW YORK

Female, age fifty-four years, brunette, tall and stout. She was treated for a catarrhal condition of her throat four and a half years ago, once every two weeks for a period of two months with a solution of nitrate of silver in the form of a spray, five grains to the ounce. She continued this treatment herself daily until she came under the demonstrator's observation. One ounce of the solution lasted one month. She first noticed a discoloration of the skin two years ago. The dis-

coloration when shown was general over the entire body, but most marked upon the parts exposed to the light and of a bluish-gray shade. It was lighter in color upon the lower extremities. The mucous membrane of the mouth had a decided bluish tinge. The discoloration on the gums was less marked. The mucous membrane of the vagina and the rectum was similarly discolored. Microscopical examination of sections from the shoulder showed the pigment granules especially present in the dense connective tissue (basement-like membrane) of the sweat gland coil, and to a less extent in a similar situation in the excretory duct. The pigment was also quite abundant in the perimysium of the unstriped muscle bundles. A slight amount of pigment was also present in the lymph spaces in the upper part of the corium. Pigment was absent in all of the epithelial structures.

### A Case of Xanthoma Multiplex

PRESENTED BY DR. JAMES MACFARLANE WINFIELD, OF BROOKLYN

Female born in the United States; Russian Hebrew parents. Nothing of interest in the family history. Personal history—was a fine baby with a clear, healthy skin, and with the exception of measles had never been ill; bowels regular, never been jaundiced; when the child was four months old, the mother stated that she noticed a few faded brownish macules about the neck, a month later small reddish papules appeared in the centre of the macules; they were clear red and at no time contained any fluid; the eruption was thought to be prickly heat and was treated accordingly; the papules gradually increased in size, became less hard, the red color fading into yellow or orange yellow; the skin over the spots became soft, wrinkled and flabby, the course of development from the primary macule to the full-grown xanthomatous lesion taking about six months. The eruption involved the trunk, legs, arms, and neck, being more extensive about the neck and upper part of the trunk; in some places the lesions were closely grouped; none had disappeared and new ones were constantly developing. The child's health seemed to be perfect; no enlargement of the liver, no urticaria; examination of the urine negative.

Microscopical examination of the lesions showed them to be xanthoma.

**A Case of Xanthoma Tuberosum Complicated by Diabetes**

PRESENTED BY DR. HOWARD FOX, OF NEW YORK

Æt. forty; widow; born in Germany; bath attendant. The eruption first appeared about nine years ago on the elbows. A year and a half ago the patient noticed a single small lesion on the knee and four years ago several lesions on the thigh. The lesions on the buttocks appeared recently. Three years ago she began to suffer from excessive thirst and appetite, this condition persisting till a year ago. During the past two years she lost twenty pounds and felt generally weak.

The elbows showed discrete and clustered nodules of typical xanthoma tuberosum. On the buttocks there were about fifteen discrete, yellowish nodules varying from a pinhead to hemp-seed in size. Her liver was enlarged; the surface smooth. The urine contained six per cent. of sugar and bile pigment. The lesions had remained unchanged during six months' observation.

PROF. ERICH HOFFMANN, of Berlin, said the localization and appearance of the lesions in this case were suggestive of diabetes.

DR. JOSEPH ZEISLER, of Chicago, said he did not think it was at all characteristic of diabetes to find these tuberose forms of the eruption. It was the generalized form of xanthoma that was more commonly observed in diabetes.

DR. A. R. ROBINSON, of New York, said he was inclined to agree with Dr. Zeisler that the tuberose form of xanthoma with such a localization as was shown in Dr. Fox's case was not met with in diabetes. In connection with that disease, the eruption was apt to be more generalized and the lesions variously sized with frequently a hyperæmic periphery.

DR. H. RADCLIFFE-CROCKER, of London, said he agreed with the general statement that xanthoma diabeticorum did not, as a rule, show the nodular lesions observed in Dr. Fox's case. Still, there was no hard and fast rule, and the speaker said he recalled a case where he had made a diagnosis of diabetes from the appearance

of lesions of this kind on the buttocks. He had seen very extensive cases of xanthoma with sugar and without sugar.

DR. FRANCIS J. SHEPHERD, of Montreal, said that at a meeting of the American Dermatological Association held in Montreal some years ago he reported a case of xanthoma associated with diabetes and gall stones. After the removal of the gall stones, the xanthoma disappeared. The glycosuria in this case was probably due to some involvement of the pancreas and the xanthoma due to some liver condition.

DR. J. NEVINS HYDE, of Chicago, said that almost all of the instances of xanthoma diabeticorum that he had observed were cases of glycosuria and not diabetes, and the sugar had disappeared coincidently with the xanthoma.

DR. JOSEPH GRINDON, of St. Louis, said the case shown by Dr. Fox looked like the tuberose form of xanthoma, and that the eruption was not characteristic of xanthoma diabeticorum as he knew it.

### A Case of Nævus Pigmentosus Removed with Liquid Air

PRESENTED BY DR. WILLIAM B. TRIMBLE OF NEW YORK

The patient was a girl aged twenty. The lesion, about three quarters of an inch in diameter, had been situated to the left of the middle line of the chin just below the angle of the mouth. It was of the mouse skin variety, a peculiar feature being that the central portion was verrucous and elevated about one-eighth of an inch above the surface. Four treatments with liquid air had effected a cure; the pigmentation had disappeared and no noticeable scar was left.

### A Case of Acne Necrotica

PRESENTED BY DR. GEORGE HENRY FOX, OF NEW YORK

Woman, æt. twenty-two; single; Russian; dressmaker. Family history negative.

Patient had always been rather delicate. She suffered from "colds" rather often; never noticed any glandular enlargements. She expectorated blood on one occasion. She did not sweat at night; lost ten pounds last year. Lesions on her ankles appeared three and one-half years ago. One and one-half years ago lesions appeared on backs of hands and several weeks later on posterior surface of forearms, elbows,

and lower parts of arms. Three months later others were noted on the buttocks and back of thighs. The pigmented patch on the face had existed five years.

Examination showed patient to be fairly well nourished. There were extensive patches of chloasma on the forehead and cheeks. On the backs of hands, they were more or less grouped over the knuckles. On the backs of forearms, elbows, and lower half of arms, on buttocks, backs of calves, and dorsa of feet were numerous discrete lesions as follows: pinhead to pea-sized maculo-papules and papules of a purplish tint, some of the papules showing minute central crusts. No vesicles were present. Scattered among the lesions were pinhead to pea-sized pitted scars, some white, others bluish in color. Face, trunk, palms, and soles were free of lesions.

Dr. Joseph Zeisler, of Chicago, said he thought the case shown by Dr. Fox was extremely interesting. One of the members had suggested the diagnosis of lichen planus, but that could be readily disposed of on account of the peculiar location of the lesions about the elbows. The speaker said he regarded the eruption as coming under the category of what the French had termed folliclis. There were a number of scars present, which showed that there was an atrophic process going on.

### A Case of Adenoma Sebaceum

Presented by Dr. George Henry Fox, of New York

Girl, æt. nineteen; single, U. S.

Present eruption began at five years of age as small solid colorless elevations which became reddened two years later. Since then there had been no change in the eruption. The lesions consisted of pinhead to hemp-seed-sized, firm, reddish, discrete nodules, seen in greatest abundance about the nose, cheeks, and forehead. The patient's intellect was considerably below the average. She had three sisters all of whom were very bright and who had fine complexions. Treatment of the left side of the face by electrolysis had produced considerable improvement.

That the term "adenoma sebaceum" was in many cases a misnomer was seen from the pathological report of this case by Dr. A. M. Pappenheimer who said: "Histologically the

tumors seem like multiple small fibromata, which in places have a papillomatous contour. The presence of a few sebaceous glands in the nodule excised from the nose where they are normally so abundant would not I think justify one in calling it an adenoma sebaceum. None of the nodules are very vascular, certainly not sufficiently so to warrant their classification with the angiomata."

**A Case of Sclerodactylia Associated with Raynaud's Disease**

PRESENTED BY DR. HOWARD FOX, OF NEW YORK

Æt. fifty; widow; Sweden; cook.

When twenty-four years old her hands were frost bitten. Ten years later she began to suffer from "dead fingers" in all of the terminal phalanges. These attacks were brought on by exposure to cold. Twenty-one years ago "blood blisters" began to appear on the tips of fingers and some of the toes. Some of these developed into deep-seated sores on the finger ends, exposing the bone. Ten years ago, fingers began to be stiff and the overlying skin drawn and tight. Five years ago there were sudden paroxysmal attacks of blindness, which would appear at intervals of two weeks and last a few minutes. Attacks continued for a year and then ceased. She lost forty pounds since the beginning of her illness.

Examination showed skin of thumbs and fingers to be smooth, glossy, and tightly stretched. After exposure to cold, alternating pallor and blueness were noted in terminal and second phalanges. Some of the terminal phalanges were absent, others greatly atrophied. There was considerable autolysis of the joints of her right hand. A radiograph of the left hand showed marked bone atrophy. The skin over arms, face, and shoulders was tight and drawn.

(Case reported in *Jour. Cutan. Dis.*, August, 1907.)

**A Case of Slowly Spreading Pigmentation over the Left Scapula and Clavicle**

PRESENTED BY DR. A. R. ROBINSON, OF NEW YORK

The pigment formed larger and smaller patches. The color was like that in tinea versicolor, but there was no scaling. Hypertrichosis was present in the oldest part, bearing some resemblance to nævus.

Microscopically, sections showed hyperpigmentation, as in chloasma.

**A Case of Extensive Lupus, Involving both Groins, the Entire Lower Abdominal Region, the Sheath of the Penis and Glans Penis; Cured by Curettage and the Thermo-Cautery**

PRESENTED BY DR. PRINCE A. MORROW, OF NEW YORK

The patient was fifty-five years of age. About fifteen years ago his left testicle was removed for tuberculosis. Soon thereafter he was under the demonstrator's observation at the New York Hospital for a short time, as the disease had spread to the adjacent inguinal region. He soon disappeared and did not come under observation again until November, 1905. At that time the eruption had extended over the entire lower abdominal surface, involving the umbilicus, with numerous tuberculous nodules and ulcerations of the skin of the penis.

He was anæsthetized and the entire affected surface was thoroughly curetted—followed by the Paquelin cautery. Occasional repetition of the curettage when nodules reappeared, was followed by a complete cure in three months.

The patient presented himself again in 1906 with a new development of deep ulcerative lesions upon the glans penis, which were curetted and cauterized. At that time it was found that he had two tight strictures of the penile portion of the urethra, which were divided. He was discharged apparently well, with directions to keep them open by the daily use of a bougie.

He returned the week before presentation with partial retention of urine from recontraction of the strictures. It was possible that the urethra is involved in the tuberculous process.

One feature of interest in the case was that a tuberculous process, having its primary focus in the testicle, instead of following the course of the cord, was deviated to the contiguous cutaneous surface.

**A Case of Dermatitis Herpetiformis**

PRESENTED BY DR. WILLIAM B. TRIMBLE, OF NEW YORK

Patient was a man aged forty-four; native of Ireland.

There had been no tuberculosis in the family. The pa-

tient had had an attack of pneumonia in 1888 and was at the present time tuberculous. His skin eruption was papulo-vesicular, grouped and generalized and of eighteen years' duration. It occurred in exacerbations, about one attack a year, the disease never entirely disappearing.

**A Case of Carcinoma of the Caecum, Treated by Extra-Abdominal X-Ray Exposures, Apparently Cured**

PRESENTED BY DR. CARL BECK, OF NEW YORK

Patient, a man of sixty-five years, recently developed signs of cachexia, obstruction, and tenderness in the right iliac region. On April 14th a hard mass the size of an outstretched hand was felt in that region. An opening of the abdomen was made above the tumor which was firmly adherent to the posterior region of the fossa. It was hard, with irregular surface and the typical appearance of a fibrous carcinoma. Its anterior surface was stitched to the peritoneum so that a portion of the extent of the palm of a man's hand was exposed. One day after the operation a five-minute X-ray exposure with tubular diaphragm of the reporter was made. This was repeated seven days in succession, with a strong current, then every second day. Two weeks after the first irradiation there was a slight erythema. There was an interval of two weeks' rest and then exposure twice a week. Five weeks after the operation the tumor could not be palpated. At the time of presentation, five months after the operation, the patient was well. There were no signs of swelling.

THE REGULAR SESSION OF THE CONGRESS WAS CALLED TO ORDER AT 11 A.M.

PROF. E. GAUCHER, of Paris, and DR. ANDREW R. ROBINSON, of New York, Vice-Presidents, in the Chair.

# WEITERE ERFAHRUNGEN MIT DEM WEISS- UND BLAULICHT DER QUARZLAMPE

VON PROF. ERNST KROMAYER, BERLIN

## VORBEMERKUNG

Durch Finsen's epochemachendes Lebenswerk ist das Licht ein Heilmittel ersten Ranges geworden. Seiner allgemeinen Verbreitung stand aber der hohe Preis und die Schwerfälligkeit der Finsenapparate entgegen.

In der medizinischen Quarzlampe glaube ich einen Ersatz der Finsen-apparate und eine bequeme Lichtquelle angegeben zu haben, sodass nunmehr die Lichtbehandlung Allgemeingut der Ärzte werden kann.

Die Quarzlampe ist eine aus geschmolzenem Quarzglas bestehende Quecksilber-Vakuumlampe, die in ein fliessendes Wasserbad eingebettet ist, dessen Gehäuse in Grösse e. Faust das Licht durch ein Quarzfenster austreten lässt, das, wie Finsen'sche Drucklinse direkt als Compressorium benutzt werden kann.

Seit meiner ersten Veröffentlichung über die Quarzlampe (1) sind bereits eine ganze Reihe von Arbeiten erschienen, die meine Angaben zwar zum grossen Teil bestätigen, aber gleichzeitig eine Reihe berechtigter Ausstellungen machen. Es sei mir gestattet, diese gemeinsam mit meinen eigenen weiteren Erfahrungen und den inzwischen gemachten Verbesserungen an der Lampe hier zu besprechen.

### 1. *Oberflächenwirkung der Quarzlampe*

Die grosse überlegene Flächenwirkung der Quarzlampe wird allseitig auch vom Finseninstitut in Kopenhagen anerkannt (4, 5). Einigen Autoren [Busk (4), Stern (10) ] erscheint sie aber zu gross zu sein und leicht zu unliebsamen Lichtnekrosen Veranlassung geben zu können. Obgleich ich nur in zwei Fällen nach einstündiger Belichtung Lichtnekrosen habe auftreten sehen, so erscheint mir doch die starke Oberflächenwirkung der Quarzlampe in den Fällen unerwünscht zu sein, wo eine Tiefenwirkung, wie beim Lupus, beabsichtigt ist.

Durch Beimengung einer Methylenblaulösung (11, 14, 14a) zur Spülflüssigkeit der Lampe kann diesem Übelstande abgeholfen werden, indem, wie ich schon früher gezeigt habe, ein grosser Teil der äusseren ultravioletten Strahlen, auf denen die Oberflächenwirkung beruht, ebenso absorbiert wird, wie ein Teil der Wärmestrahlen, sodass das "blaue" Quecksilberlicht eine Auslese derjenigen Strahlen enthält, denen neben einer grossen photochemischen Wirksamkeit die relativ grösste Penetrationsfähigkeit zukommt.

Eine gleiche Auslese der Strahlen kann durch Filtrirung des Lichtes durch eine blaue "Ultraviolett" Glasscheibe, wie sie die Quarzlampen-Gesellschaft an den später zu besprechenden abnehmbaren "Belichtungsansätzen" angebracht hat, erreicht werden (14b).

Bering (6) hat experimentell nachgewiesen, dass das blaue Quecksilberlicht dem weissen in seiner Tiefenwirkung quantitativ nicht nachsteht, sodass es also vorteilhaft überall dort angewendet werden kann, wo eine Tiefenwirkung des Lichtes beabsichtigt ist.

Ueberall aber, wo es nur auf Erzeugung einer oberflächlichen Hautentzündung ankommt, ist natürlich das weisse Quecksilberlicht anzuwenden, das nach Busk (4) schon nach Einwirkung von 1 Sekunde ein deutliches Lichterythem am Vorderarm hervorruft.

### 2. *Tiefenwirkung der Quarzlampe*

Während ich nach meinen experimentellen und klinischen

Erfahrungen eine grössere Tiefenwirkung meiner Lampen als der Finsenapparate annehmen zu können glaubte, habe ich in diesem Punkte, wenn auch Zustimmung, so doch mehr Widerspruch erfahren, Zustimmung von Wetterer (3), Lohde (13) auf Grund klinischer Erfahrung von Wichmann (9) und besonders von Bering (6) auf Grund experimenteller Untersuchung, Widerspruch von Schultz (12), Stern und Hesse (10) Busk (4), Johannsen (5) auf Grund theoretischer Überlegung und experimenteller Untersuchung.

Die entgegengesetzten Resultate der verschiedenen Forscher scheinen mir auf einer differenten Anordnung der betreffenden Experimente, einer verschiedenen Handhabung der Lampen und einem ungleichen Calcül zu beruhen, was am deutlichsten aus der Arbeit von Johannsen (5) (Finseninstitut zu Kopenhagen) hervorgeht. Johannsen gibt für die Lichtenergie beider Lichtquellen folgende Tabelle:

| | Sichtbare Strahlen (bis 0,4) | Innere ultraviolette Strahlen (0, 4 bis 0,32) | Äussere ultraviolette Strahlen (von 0,32) |
|---|---|---|---|
| Finsen-Reyn Lampe | 4,4 | 7,1 | 16 |
| Prof. Kromayers Quecksilber Lampe | 2,0 | 8,0 | ca. 35 |

Da die sichtbaren Strahlen (bis 0,4) die penetrationsfähigsten sind, vindiciert er der Finsenlampe die stärkere Tiefenwirkung (4,4: 2,0), während er der Quarzlampe die stärkere Oberflächenwirkung zuspricht (35: 16).

Johannsen hat hierbei die Lichtenergie der Finsenlampe im Finsen-Reyn Fleck (2,1 cm. Diameter) gemessen, d. h. an der Stelle, an der die Lichtstrahlen die grösste Centrirung haben, während die therapeutisch ausgenutzte Lichtenergie der Finsenapparate sich gleichmässig auf die Fläche der Finsen'schen Drucklinse verteilt, die einen Durchmesser von ca. 3,5 cm. hat. Die therapeutisch ausgenutzte Lichtenergie der Finsenapparate verhält sich also (natürlich auf gleiche Flächeneinheit bezogen) zu der von Johannsen im Finsen-Reyn Fleck gemesse-

nen umgekehrt wie das Quadrat von 3,5 zu dem von 2,1 oder wie 441 zu 1225 oder fast wie 1 : 3.

Um die therapeutisch ausgenutzte Lichtenergie beider Lampen zu vergleichen, sind also die von Johannsen angegebenen Zahlen für die Finsen-Reyn Lampe durch 3 zu dividieren, wodurch alsdann die starke therapeutische Überlegenheit der Quarzlampe über die Finsen-Reyn Lampe in allen Strahlengattungen klar zu Tage tritt, und zwar nach den im Finseninstitut in Kopenhagen selbst gemachten Lichtmessungen:

für die sichtbaren Strahlen (bis 0,4) wie 2 : 1, 5 (ca.)
" " inneren ultravioletten Strahlen (bis 0,32) wie 8 : 2,4 (ca.)
" " äusseren ultravioletten Strahlen (von 0,32 an) wie 35 : 5,6 (ca.)

Bering (6) hat die Durchdringungsfähigkeit des Lichtes beider Lampen durch Mäusehäute mit dem Eder'schen Photometer (Trübung einer Lösung von neutralem Ammoniumoxalat und Quecksilberchlorid durch Lichtwirkung) verglichen und macht folgende Angaben:

| | |
|---|---|
| Finsen-Reyn Lampe: | Eine Haut nach 3 Min. Trübung |
| | Zwei Häute nach 15 Min. schwache Trübung |
| | Drei Häute keine Trübung |
| Quarzlampe: | Eine Haut nach 15 Sec. Trübung |
| | Zwei Häute nach 30 Sec. Trübung |
| | Drei Häute nach 1½ Min. Trübung |

Darnach wäre die Tiefenwirkung der Quarzlampe wenigstens 30mal stärker als die der Finsen-Reyn Lampe.

Wichmann (9) hält die Tiefenwirkung des Blaulichtes der Quarzlampe für grösser als die der Finsen-Reyn Lampe, die des Weisslichtes hingegen für geringer, da durch die grosse Masse der äusseren ultravioletten Strahlen dieses Lichtes bei längerer Bestrahlungsdauer Veränderungen in den oberflächlichen Hautschichten hervorgerufen würden, welche dem Durchgang der Strahlen in die Tiefe hinderlich seien.

Ich selbst habe die Tiefenwirkung der Quarz- und Finsen-Reyn Lampe noch jüngst wieder an meinen eigenen Vorderarmen durch Zwischenlage gut angefeuchteter Papierlagen geprüft und folgende Resultate gehabt:

| | 1 Papierlage | | 2 Papierlagen | | 3 Papierlagen | |
|---|---|---|---|---|---|---|
| | Dauer der Bestrahlung | Reaktion | Dauer der Bestrahlung | Reaktion | Dauer der Bestrahlung | Reaktion |
| Quarzlampe (Weisslicht) | 5 Min. | heftige Entzündung | 5 Min. | keine | 30 Min. | keine |
| | | | 10 Min. | mässige Entzündung | 50 Min. | geringe Entzündung |
| Finsen–Reyn Lampe | 5 Min. | leichte Rötung | 5 Min.<br>10 Min. | keine<br>keine | 30 Min.<br>50 Min. | keine<br>keine |

Die Finsen-Reyn Lampe brannte mit 21 Amp., der Lichtbogen war 5,5 cm. von der hinteren Quarzscheibe des Concentrationsapparates entfernt. Als Quarzlampe benutzte ich das käufliche Modell mit nicht regulierbarem Widerstande.

Das letzte und entscheidende Wort über den Wert der so viel diskutierten "Tiefenwirkung" wird aber erst die therapeutische Erfahrung zu sprechen haben.

### 3. *Behandlung schwer zugänglicher Hautstellen und der Schleimhäute*

Mit Recht wird von den meisten Autoren betont, dass das 4,5 cm. im Durchmesser grosse, plane Quarzfenster der im Handel befindlichen Lampe ungeeignet sei, um schwerer zugängliche Hautstellen (Augenwinkel, Nasenpartien etc.) durch Compression zu behandeln. Dieser Übelstand ist jetzt durch verschieden gestaltete kleinere Compressorien [1] beseitigt, die dem Quarzfenster adaptirt werden. Die Lichtenergie wird nach meinen Berechnungen und Beobachtungen durch diese Ansätze nur unwesentlich verringert. Auf Anregung von Schüler (8, 8a) hat die Quarzlampengesellschaft solide Quarzglasstäbe hergestellt zur Behandlung kleinerer Hautstellen und der Schleimhäute (14b).

In diesen Quarzstäben, deren eines Ende direkt auf das plane Fenster der Quarzlampe aufgesetzt wird, pflanzt sich das

[1] Von der Quarzlampen-Gesellschaft Berlin-Pankow hergestellt und vertrieben (14b).

Licht durch totale Reflexion fort, um am Ende des Stabes in voller Intensität auszutreten. Mit ihnen ist es möglich, die Schleimhäute der Harnröhre, des Mundes, des Rachens, der Nase, ja voraussichtlich auch der Harnblase und des Kehlkopfes phototherapeutisch zu behandeln.

### 4. *Indikationen und therapeutische Resultate*

Das Quarzlampenlicht ist bisher erfolgreich angewandt worden bei folgenden Krankheiten: Lupus vulgaris, Lupus erythematodes, Cancroid, Teleangiectasia, Nævus vasculosus, Acne rosacea, Acne vulgaris, Furunculosis, Folliculitis barbæ, Folliculitis decalvans capitis, Eczem, Psoriasis, Alopecia pityrodes, Alopecia areata, Ulcera cruris [Kromayer (2), Wetterer (3), Müller (7), Wichmann (9), Stern–Hesse (10), Lohde (13)].

Unter diesen Krankheiten beanspruchen das Hauptinteresse der Lupus vulgaris, die Teleangiectasien (Nævus vasculosus) und die Alopecia areata, weil bei diesen Krankheiten das Licht Heilung zu bringen vermag über alle anderen bisherigen Mittel hinaus.

Während ausser mir noch Lohde (13), Wichmann (9), Müller (7), Wetterer (3) die Quarzlampe den Finsenapparaten für die Lupusbehandlung vorziehen und insbesondere Wetterer mit der Quarzlampe noch Heilungsresultate erzielt hat in Fällen, wo Finsen-Reyn versagt hatte, sind Stern–Hesse von der Wirkung der Quarzlampe nicht befriedigt, allerdings haben diese Autoren die Belichtungszeit zu kurz gewählt (10 Min.).

Für die Behandlung der Teleangiectasien (Nævus vasculosus), (Acne rosacea) steht das Quarzlampenlicht nach Müller (7) an erster Stelle. Jedenfalls lassen sich *ausgedehnte* Gefässmale nur durch die Quarzlampe beseitigen oder bessern.

Bei der Alopecia areata, soweit sie überhaupt heilbar ist und nicht durch Recidive eine Heilung illusorisch macht, ist die Lichtentzündung anerkanntermassen das sicherste Heilmittel, das in der Quarzlampe in bequemster Form geboten wird, ohne dass natürlich dieses Licht in der Heilwirkung vor anderen Lichtquellen etwas voraus hat.

Bei den übrigen oben angeführten Krankheiten kann zwar das Licht in einzelnen Fällen von vorzüglicher und vielleicht unersetzlicher Wirkung sein, es ist aber dabei zu bedenken,

dass wir für das Gros der Fälle bequemere Behandlungsmethoden haben.

### 5. *Schlussbemerkung*

Wir stehen meiner Ansicht nach zur Zeit noch im ersten Beginn der Lichtbehandlung. Erst jetzt, nachdem eine bequeme, billige und wirksame Lichtquelle gefunden ist und nachdem auch die Schleimhäute der Lichttherapie zugängig gemacht worden sind, kann die Lichtbehandlung Gemeingut aller Ärzte werden, die alsdann viribus unitis die Indicationen der Lichtbehandlung erweitern und ihre Grenzen festzustellen imstande sind.

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# THE SPECIFIC ACTION OF RADIUM AS A UNIQUE FORCE IN THERAPEUTICS

BY DR. ROBERT ABBE, OF NEW YORK

In recounting the diseased conditions of the body in which we see favorable restorative power from radium, I do not invite criticism from those who may say that the same effects can be produced by caustics, Roentgen rays, dietetics, local medication, or electricity. I wish briefly to present facts to show that radium acts entirely unlike these, and to clear the air of some prevailing exaggeration and doubts.

Butlin recently said "there are two kinds of evidence: that which satisfies the inquirer who wishes to believe, and that which is required by the skeptic." If both these could follow the interesting series of results which men who have been able to use this remedy have seen, argument would be simple.

The inefficiency of word description or photography in delineating surgical growths, led me long since to keep records by plaster-of-paris casts, where possible, to enable me more accurately to compare by measurement and appearance before and during the study of radium effects.

A few demonstrations of this are more quickly convincing than words or photographs. As a basis for argument, therefore, I present to your notice a small group of casts chosen from hundreds which I have made.

As a typical epithelial carcinoma, observe this round, raised growth on one side of the forehead. It is 2 cm. in diameter by a half cm. in height. Strong radium (60 mgr.

pure radium bromide) sealed in a glass tube, pressed against the growth for one hour, produced a prompt disappearance with only a shallow pink cicatrix.

Another of the same size on one side of the nose growing worse for two years, in an elderly lady, and showing fungus ulceration, disappeared in four weeks after one application of one hour. The accompanying cast shows the almost invisible shallow cicatrix. This has remained cured for three years. Scores of such cases have yielded similar results under radium treatment. Many of these casts have been modelled before and after treatment and show the specific action of this agent, with almost infallible results.

Observe this severe case of epithelial cancer of the nostril, septum, and upper lip, in a lady of seventy years. It had become distressing to herself and friends. When she was referred to me her age and delicate physique, as well as her dread of disfiguring operation, led me to try radium. I laid upon the diseased part Curie radium 15 cgr. 300,000, and 10 mgr. 1,000,000, this would represent about the strength of 20 mgr. of the present standard pure German radium bromide. This was repeated for one hour on ten successive days. A slight reaction was then noticed, and treatment stopped. At two weeks the edges were much flatter and contracting, while discharge had ceased and the florid granulation changed to a gray surface, exuding a little thin lymph. In five weeks the entire sore had healed, and only a thin small cicatrix remained. These three stages are veritably shown in the accompanying colored casts (Plate xxi, Fig. 1). Two years have gone by and the patient remains cured with a perfect smooth, small cicatrix.

The same type of disfiguring cancer is shown in another cast, one nostril and cheek being diseased. This patient was sent to me by Prof. Weir to see if a disagreeable plastic operation could be avoided. Three short séances, total thirty-five minutes, were given with the strongest specimens (amounting to twelve times the working unit of 10 mgr. pure). In two days it already had begun to retrograde, and in three weeks was entirely and permanently healed.

On the same day, nearly two years ago, another man was

referred from the same surgeon, for a similar growth which had involved one-third of the upper eyelid. Three five-minute séances with one cell of pure German radium bromide, 10 mgr. (working unit), permanently cured this man in two weeks.

In such cases I protect the eye by thin sheet lead, shaped like a spoon handle, covered by guttapercha tissue, and slipped under the cocainized eyelid, between which and the radium the diseased part is compressed.

I show you also many other colored casts, indicating the condition, treatment, and result. A large proportion of these are situated upon the face, neck, and ears. These are not only favorite sites, but offend by their disfigurement, and tax the ingenuity of the surgeon to remove them by a plastic operation adequate to prevent recurrence.

Most of the grave cases were subjected to critical microscopical study before treatment, and so uniformly found to be epithelial carcinoma that in minor cases I have trusted clinical appearances, which to me, after thirty years of surgical work, seem worthy of confidence.

The accompanying card (Plate xxi, Fig. 2) shows a face, on which I have charted the position of seventy-seven cases of epithelioma (or lupus that has in parts become epitheliomatous) on seventy patients.

This represents a selected typical series, but by no means all, which I have treated by radium for this particular disease. Numbers of these existed for years as keratosis before becoming epitheliomata. The ordinary senile keratosis has not been included among them, but forms another most interesting series. It can be made to disappear always in ten days, after one application of twenty minutes of the working unit of radium.

Of the epitheliomata charted above I may say that I have yet to see one case which did not show retrograde changes soon after treatment. In some of those, however, which had involved deeper layers than the cutaneous, the invasion would sometimes run ahead of the tissue treated, as, for example, in the orbit where the eyelid had first been diseased, and a mass had grown into the underlying cellular and fatty tissue of the orbit. One would uniformly see a superficial cure and a partial

deep reduction. Then, after some weeks there followed a progressive invasion beyond where it seemed wise, or possible, to treat it on account of the proximity of the eyeball. In such cases, therefore, I have treated the case up to this point, and then thoroughly removed the diseased orbital contents.

Epithelioma of the eyelid, when confined to the cutaneous, mucous, or glandular structures, seems to be controlled and cured as by a specific. No surgical agent has yet been found so efficient. Even small specimens of 1 milligram of strongest German radium bromide have shown their beneficent action.

As a further note preliminary to better understanding of the unique action of radium, let me recall its value in treating warts. The curative action is perfect in every case, no matter how inaccessible, even under the finger nails, or how large or ancient. A radium specimen sealed in a glass tube will always cure by contact. Even on the soles of the feet where painful callus had been found to have verrucous base, one application of radium has produced prompt cure in three cases.

In melanotic moles—either congenital, hypertrophic, or hairy—the action of radium is almost specific, and with this singular coincident action, namely, that where the dosage is graduated correctly the hypertrophic pigmented tissue atrophies and leaves normal appearing skin. Even in the pigmented skin of a black man I found pink skin areas defined the points of contact with my radium tubes. I have thought it might have selective action for pigment layer cells, and might be used in melanotic growths; hence I have used it in superficial brown moles, coal-black melanotic moles, recurrent nodules of melanotic sarcoma, melanotic epithelioma (primary), and on thick-skinned, hairy, pigmented moles. The result is invariable—the growth and pigmentation uniformly retrograde.

To illustrate, let me cite a case of pigmented hairy mole of the face. Large, hairy, pigmented mole on thick brown skin, covered with hair like a mouse skin, in which were a large number of longer hairs 1 to 1½ cm. long. Approaching this novel condition with caution, I began in June, 1906, with the strongest tube, 60 mgr., pure radium, pressing it on various

parts for half an hour at a time. On three occasions during two weeks I applied it in all two and a half hours. On the following week a sharp reaction occurred with blistering and epilation. Watching the results of each treatment, I proceeded with such slowness that during nine months I made thirteen treatments, a total of eleven hours (nine hours of 60 mgr. tube and two hours of 10 mgr. cell). This would represent, therefore, fifty-six hours if I had used only a 10 mgr. tube.

The result is a perfect cure, with reduction of the thick pigmented skin to normal quality without vestige of a hair. At one stage a large part was normal, except for a thin coffee-colored stain. Assuming that some pigmented cells were undertreated, I made short applications of radium, and the color entirely faded. Had I to treat the case again I would apply to the entire surface my strongest radium tube, 60 mgr., for one hour each week—not pressing it longer than five minutes on any one spot. I believe eight séances of one hour each would produce a cure—and without a scar.

Let me emphasize the retrograde change that takes place in the pigment cells, the hair bulbs, and cutaneous gland structure. In other words, radium has changed a patch of thick skin resembling that of a hairy animal to human skin.

I ask attention to another case demonstrating radium's unique power. The casts here shown (Plate xxiii, Fig. 4) accurately depict a tumor of the lower lid in a middle-aged man, growing more than a year (microscopically a small-celled sarcoma), which had progressively grown in spite of careful Roentgen-ray treatment. Four times I laid upon it some little sealed tubes of radium (total strength 20 mgr. R. Br.) for an hour each time — then waited. In two weeks the retrograde change began. In four, as the cast shows, it had undergone rapid decline, and in eight weeks it was gone. The patient presents himself for you to see that after two and a half years he remains absolutely well without recurrence, and that you cannot distinguish upon which eye the tumor was situated.

In the spindle-celled sarcomas I have observed an arrest, but not a decline of the tumor, and will at present say nothing more of them.

But in a group of so-called giant-celled sarcomata, five in number, I have been able to show that radium has what seems to me to be a distinct specific action.

I reported in 1904 the case of a lad in whose lower jaw the bone was practically destroyed at one part and replaced by a soft purple growth — sarcoma rich in myelo-placques.[1] Under radium stimulation this growth was rapidly reduced in bulk, developed ossific points throughout, and finally became solid with new bone. The boy has had no treatment for three and a half years, and he has now a solid jawbone.

In a similar condition in a case referred to me by Prof. E. G. Janeway, an elderly lady had a fracture of the lower jaw and a tumor had developed at its site. Several treatments were given with rapid retrograde of the tumor, and fine bony union resulted.

In a lady of thirty years, prolific development of soft giant-cell growth of both upper jaws and the lower right jaw has been kept in check by radium application during two years. On every reappearance of the purple growth it promptly shrinks after one or two applications.

In a small Italian lad the entire hard palate was replaced by a soft giant-celled sarcoma; it expanded the upper jaw and was not less than 3 cm. in depth. Into two points in the mass where tissue was removed for microscopical study, the strongest radium tube (60 mgr. R. Br.) was inserted for one hour on two occasions. Rapid atrophy of the whole central mass, and ossification of the remainder, followed in a few weeks—and the apparent cure continues one year after.

In a fifth case a bleeding growth began between the incisor and canine tooth—microscopically shown to contain giant cells. Two applications of radium, 20 mgr. R. Br., total one-half hour, gave prompt arrest of hemorrhage and shrinkage of the growth.

The force issuing from an hermetically sealed tube of radium consists of certain obscure radiations, to which the name beta and gamma rays has been applied, the former carrying a charge of negative electricity, the latter being

[1] See *Medical Record*, August 27, 1904.

without apparent electric charge. (The alpha rays carry a positive charge, but have such little penetrating power that they cannot escape through the glass.)

The beta and gamma rays are indistinguishable in their physical character from, on one hand, the electrons thrown off by the negative disk of the Roentgen tube, and, on the other, the rays emanating from the tube (Lodge).

It is easy to distinguish two methods of radium action. One, the specific retrograding effect on neoplasms, whose essential substance is an erratic overgrowth of epithelial, embryonal, or glandular structures. (The latter is seen in parotid or thyroid tumors, where extraordinary changes are occasionally produced by radium, though its precise limitations cannot yet be assigned.)

The other effect is seen in the occlusive blockade of highly vascular tumors by irritant action, as in nævi and large angiomata.

That its power does not reside alone in producing local inflammation is shown by its effect on dry seeds, whose life force is changed by exposure to it, so that growth is retarded after planting, in proportion to the time of exposure.

Also in animal life, as illustrated in meal worms, where radium so represses them that they go on living as meal worms, "veritable Methuselas," as it has been said, while their sisters and brothers, unradiumized, progress for generations, completing several cycles of beetles, eggs, meal worms, etc.

Of radium action on bacteria, it is enough to show two culture plates, upon whose central part strongest radium has been playing through sterile paper for fifteen hours. The colon bacillus and Staphylococcus aureus growth was checked thereby only in the immediate vicinity of the radium, after this very long exposure. In one a lead strip was interposed and growth occurred beneath it.

The time needed to destroy bacterial life in these cultures makes it improbable that the good action of radium can be considered bactericidal in malignant growths (even if these had been proved to be of bacterial origin), because that length of exposure would destroy all living tissue at the site of application. Practically, the best results are seen when a tenth

of this force is used and no necrosis of tissue follows. It is improbable, therefore, that its value is due in any large degree to its bactericidal power.

I invite your attention one moment to a very practical point, a simple and accurate method of measuring the power of radium specimens. Investigators have used extremely variable strengths and amounts of this precious mineral. It is fair to say that moderately strong specimens may be effectually used, but that very weak ones show uncertain results. Hence, a standard may well be adopted, and must be put at the present time as 10 mgr. of the German pure radium bromide, strength denominated 1,800,000.[1] Let us call this the "working unit."

Inasmuch as innumerable variations from this, both in weakness and quantity, are in use, we must have a fair gauge—and I offer the photograph plate as the easiest and most accurate test (Plate xxii, Fig. 3).

I have graphically shown my method of determining the working value of an unknown specimen. Enclose a sensitive dry plate in two black paper envelopes and mark across the paper two series of squares, writing in each the numbers 5, 10, 15, 20, 30, 40, 50, 60; cover the surface with sheet lead in which a corresponding square is cut. Place this over the first square and suspend above it the standard 10 mgr. R. Br. held at a fixed distance by a bent piece of lead. With a stop-watch in hand, expose it five seconds, move the open lead to the second square, expose 10 seconds, and so on for all. Repeat these exposures on the second series of squares, using the unknown specimen of radium for the same exact times as the standard. When the photograph plate is developed one sees two series of squares delicately shaded exactly in proportion to the time of exposure.

Observe that a shade of standard five-second exposure is identical with that of the unknown specimen of thirty seconds. We have accurate value, then, for the working force of the unknown, which will require six times the length of exposure to a tumor as the standard.

Having established the working value of a specimen of

[1] Obtainable from Hugo Lieber, 1 Platt Street, New York.

radium, one may produce the results which one sees from the working unit of 10 mgr. R. Br. (1,800,000) as follows:

1. If this be placed upon the skin for ten minutes nothing will be seen for a week. Then a pink-red spot appears, with itching and burning. After two weeks it has gone.

2. Exposure of thirty minutes. Burning, itching, and redness occur in three days, are more severe, and last two weeks. If an epithelial growth has been treated, its retrograde begins about the tenth day. In previously painful tumors the pain usually stops.

3. If an ulcerated surface be treated, or a strong radium tube be inserted in a wound for twenty-four hours, there will result a specific toxemia in many cases. The symptoms will be headache, chill, general aching, coated tongue, fever up to from 103° to 106° F., and an occasional rash like that of scarlatina.

In six cases that were perhaps overtreated, I have seen a spreading rash resembling erysipelas starting at the diseased ulcer, and subsiding after two or three weeks.

In all cases of severe reaction the sequel has been favorable. In two, however (one cancer of the tonsil and one of the tongue), I thought the patient not as well for a time afterward. But reviewing all, I can definitely state that I have never seen harm follow the use of strongest radium. On the other hand, the curative effect of severe reaction healed a large, deep angioma of the parotid, after grave toxic symptoms, with temperature 106° F.

At first I thought the toxemia might be favorable, owing to absorption into the lymphatics of a self-generated toxin (or antitoxin) along the line of preceding disease absorption. This hypothesis was disproved by two facts; first, that subsequent examination of axillary glands removed from a patient with a mammary scirrhus, who had had a lively toxic reaction, showed the disease still present in them, while the breast tumor had atrophied. Second, that the same toxemia occurred while treating a case of goitre and one of parotid tumor, in which a radium tube had been inserted with lively effect. Here was no chance for antitoxin generated from malignant growth.

I may say that my glass tubes are always cleansed and immersed in 95 per cent. carbolic acid, followed by alcohol—both after and before using—so that no infective toxemia would be likely to occur. I conclude, therefore, that fever is due to cell necrosis close to the strong radium tube, and not from liberation of a toxin.

In what does the beneficent action of radium reside? This question, with many others, still awaits solution.

We know only that we have a subtle force, which, as far as we discern, is a stream of rays charged with negative electricity with intense penetrative power, capable of traversing stone, human flesh, or solid steel with facility, which plays upon the vital cells (animal or vegetable) and alters their rate of growth, or kills them altogether.

What the vital spark is in a living thing no one knows. It has been surmised that life itself may only be an embodiment of electric force. It has been supposed by some that a living cell continues its normal career owing to a balance established within it between positive and negative electric force, and that an aggregate mass of cells in the body, such as constitutes a tumor, may result from their erratic growth owing to a loss of balance of electric equilibrium. May it not be reasonable to suppose that a mild application of radium emitting its distinctive rays is thereby capable of restoring the electric equilibrium, while on the other hand a prolonged and intense application carries the balance to a destructive termination?

Consider for a moment that remarkable case you have seen of the tumor of the eyelid. It had displaced the normal skin and mucous membrane, and grown in bulk many times the size of tissues that had been lost in it. There was no semblance of an eyelid in the mass whose tuberous growth rose in heaped-up masses on the skin, and within, and on the edge.

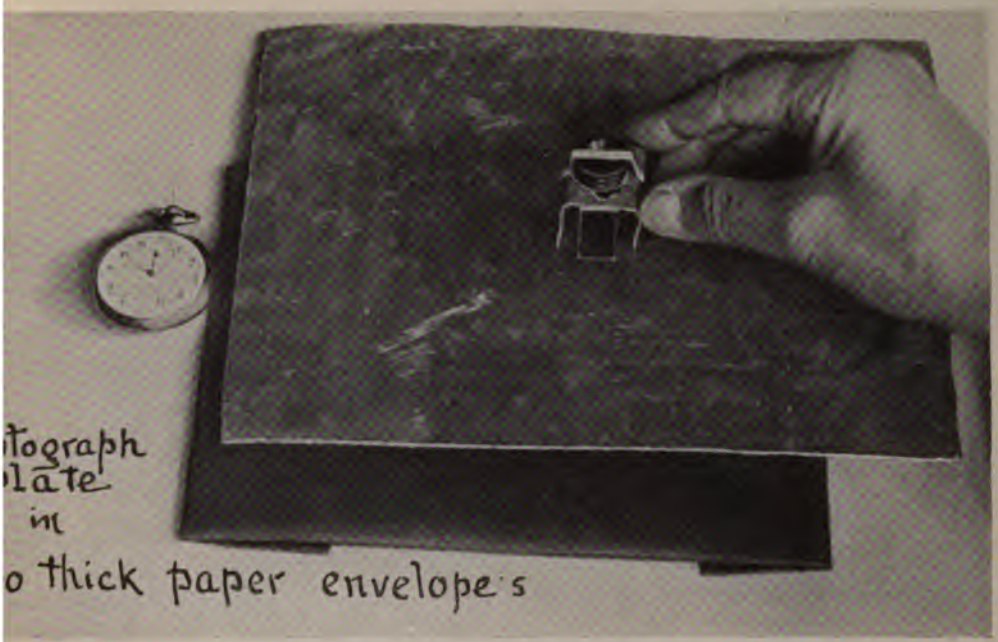
A cross-section would have shown no vestige of former tissues which were destroyed or lost in the mass. Yet, when retrograde was finished under radium action, behold the normal skin structure, the normal edge of the eyelid, normal mucous membrane, normal glands and eyelashes! The original cells were not destroyed. There was a reassembling out of the conglomerate diseased mass. Whence, then, came

PLATE XXI.——To Illustrate Dr. Robert Abbe's Article.

Fig 1.—Epithelioma of the nose and upper lip, showing diminution at the end of two weeks, and disappearance at the end of five weeks.

Fig. 2—Showing the location of the epitheliomata treated by radium in 77 cases.

PLATE XXII.—To Illustrate Dr. Robert Abbe's Article.



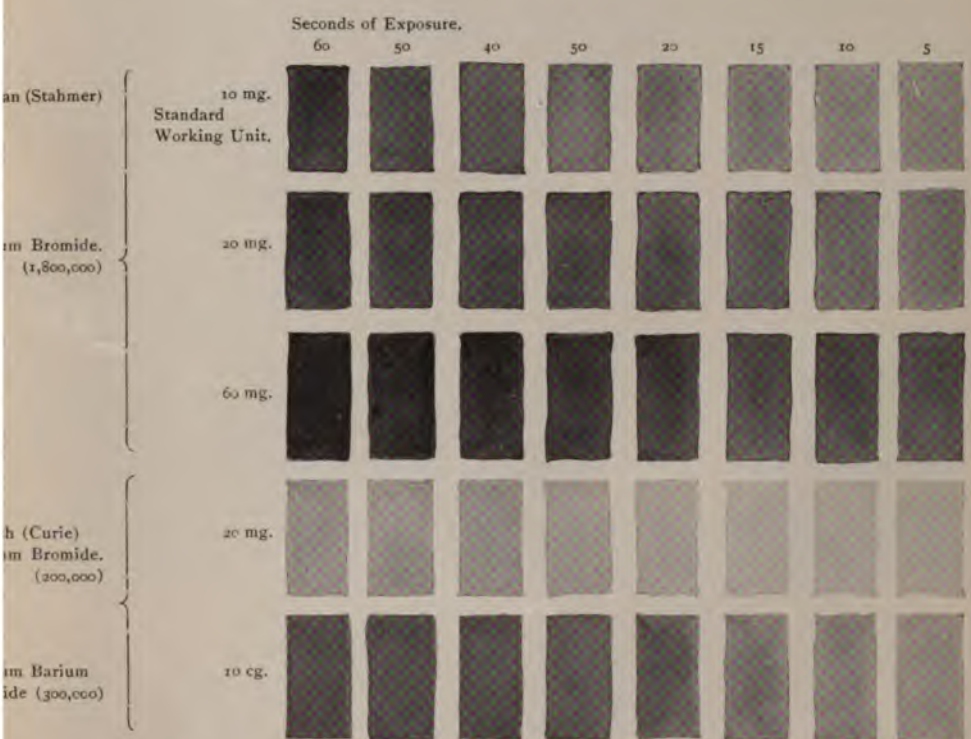




FIG. 3.—Radioautographic estimate of the working value of radium specimens.

PLATE XXIII.—To Illustrate Dr. Robert Abbe's Article.

FIG. 4.—Sarcoma of the lower eyelid, showing condition at the beginning of treatment, at the end of two weeks, at the end of four weeks, and disappearance at the end of eight weeks.

FIG. 5.—Recurrent subcutaneous nodule degenerating under one radium application; showing the sphere of

the diseased cells? This can be answered only by the assumption that an intercellular invisible and ultramicroscopic system of particles had existed with a life of their own, constituting a network holding the visible cells together. This system, then, had itself taken on an erratic growth and become a sarcoma mass, engulfing the regular occupants of the ground.

*Conclusions.*—Radium ranks, not with caustics, cautery, antiseptics, or medication, but with specifics.

This does not mean a "specific" for cancer, in the popular sense, but for erratic cell growths constituting some types of tumor tissue in the earlier stage of invasion, or of moderate development.

Details of the methods of using it have not yet been fully worked out. The dosage, so to speak, or time of exposure necessary for curative action, is as yet empirical.

Some apparent cures of small epitheliomas or sarcomas have endured already more than three years.

A photographic plate provides a good test, to show the working force of an unknown specimen, in comparison with one of standard strength.

It is not entirely a mysterious force—but, in part at least, is an electric discharge, essentially of negative elements. Hence, as far as it is possible to say, it suggests a theory of its action, in that it may supply an element of electric force vital to normal and orderly growth, the loss of which may have caused a disorderly cell growth which, in the aggregate, constitutes tumor masses.

It is supplementary to Roentgen rays, and, in some cases, is efficient where they fail.

The overaction of strong radium is destructive and vitiates the benefit of moderate use.

The best results have followed one hour's exhibition of the working unit (10 mgr. R. Br.) on small growths, and three to four hours on larger ones, with an interval of one month for study of the effect.

Ischemia of the parts during treatment greatly enhances its action.

Pigmented moles, melanotic growths, and giant-cell sarcoma, like epitheliomata of the eyelids, face, and body, are particularly

susceptible to its curative action—as a specific agent. But its value in nævoid and angiomatous tumors is due to its irritant action, producing obliterating endarteritis and fibroid changes.

## SUR L'ACTION DU RADIUM DANS L'EPITHELIOMA CUTANÉ. ÉTUDE FAITE AU LABORATOIRE BIOLOGIQUE DU RADIUM

PAR LE DR. LOUIS WICKHAM ET LE DR. DEGRAIS, PARIS

La note que nous apportons au Congrès, sur le traitement de l'épithélioma cutané par le RADIUM, est détachée d'une étude générale que nous poursuivons depuis plusieurs années sur l'emploi du RADIUM dans les maladies de la peau.

Cette étude comporte environ 1500 applications réparties sur 110 malades, la plupart de la classe hospitalière, qui nous ont été adressés par nos amis et maîtres des hôpitaux.

Elle a mis en évidence le pouvoir complexe qu'a la radioactivité d'analgésier les tissus, de les décongestionner de dévier dans leur évolution morbide les cellules altérées et même de les détruire.

Elle nous a montré que ce pouvoir pouvait etre utilisé en divers groupes de la pathologie cutanée particulièrement dans:

1°. Certaines formes de dermatoses chroniques superficielles, sèches, localisées, rebelles (comme certaines formes d'eczémas, d'eczématisation et de lichénification, certaines formes de névro-dermites, de lichen ruber plan et de psoriasis) avec action analgésique particulièrement favorable sur l'élément prurit de quelques-unes de ces dermatoses.

2°. Certaines formes de nævi vasculaires et pigmentaires.

3°. Et dans les épithéliomas cutanés et cutanéo-muqueux.

C'est à ce denier groupe que nous limitons notre communication; nos études ont porté sur 41 épithéliomas dont un certain nombre sont en cours de traitment.

Nos appareils ont été analysés par M. Baudouin, préparateur de Physique au Laboratoire Biologique du RADIUM aussi, connaissant les rayonnements utilisables, ceux qui pénètrent les

tissus, nous avons pu, en tenant compte de la durée et du nombre des applications indiquer pour chaque résultat obtenu la dose et la nature de la radio-activité employée.

Si M. Danlos, depuis ses travaux de 1905, a pu considérer le RADIUM comme le traitement de choix des petits cancroides, l'attention n'a pas été attirée sur l'action du RADIUM dans les épithéliomas plus importants ni sur la question du dosage.

Nous insisterons surtout sur ces deux points.

Le dosage est d'une utilité primordiale. Il indique l'activité du sel de RADIUM utilisé et surtout la radiation extérieure de l'appareil employé, celle correspondant à la quantité de rayons qui pénétreront les tissus—l'activité initiale est en effet diminuée du fait de l'incorporation du sel de RADIUM à un vernis spécial destiné à fixer le sel sur l'appareil.

Le dosage donnera aussi la teneur en rayons $\alpha$, $\beta$ et $\gamma$, tous utilisés dans le traitement de l'épithélioma.

Grâce à ces données, nous pourrons suivant les caractères objectifs d'un épithélioma indiquer quel sera le temps d'application utile pour obtenir la guérison.

Ces temps d'application seront variables suivant que l'on aura a faire à:

Un épithélioma bourgeonnant, ulcero-croûteux à évolution torpide, térébrant.

Prenant pour type d'appareil un appareil de 1 cent. ½ de diamètre contenant 0.025 de sulfate de RADIUM, ayant comme activité 500,000, une radiation extérieure de 62,000, et contenant 2 % $\alpha$, 84 % $\beta$ et 14% $\gamma$, nous pouvons approximativement évaluer à:

Sept à 8 heures le temps utile pour l'épithélioma bourgeonnant, dans ce cas les cellules jeunes de prolifération sont plus facilement influencées.

Dans l'épithélioma ulcéro-croûteux qu'il faudra toujours avoir soin auparavant de débarrasser de sa croûte, la surface ainsi mise à nu est exulcérée avec une bordure de perles épithéliales et un centre légèrement cupuliforme dans ce cas, 10 à 12 heures d'application en moyenne seront utiles.

Enfin, dans la forme térébrante à bords taillés à l'emporte pièce avec dépression profonde et fond atone, 14 heures environ deviendront nécessaires.

Les séances seront de 1 heure à 2 heures tous les jours ou tous les 2 jours.

Quinze jours à 3 semaines après la dernière application commencent les phénomènes de réaction. Ceux-ci consistent en l'apparition d'une croûte melliforme plus ou moins épaisse reposant sur une petite nappe de pus. La croûte n'adhère que très peu à sa périphérie et il est facile en appuyant légèrement à son centre de constater qu'elle repose sur un plan fluctuant et en même temps de faire sourdre 1 ou 2 petites gouttelettes purulentes. Pendant la présence de cette croûte il existe aussi un suintement parfois assez abondant de sérosité. Le malade ressent pendant cette phase une sensation de chaleur assez vive.

Si on soulève cette croûte, ce qui est toujours facile, on voit la nappe purulente qui, une fois enlevée, laisse à découvert les tissus de réparation. Ceux-ci, de couleur rosée, comblent assez rapidement les cavités qu'avait creusé la néoplasie, et, signe très caractéristique, la lésion qui saignait facilement, ne saigne plus.

Comme soins à donner à cette réaction l'application de vaseline boriquée suffit habituellement, mais si la suppuration tend à devenir par trop abondante, quelques attouchements à l'eau d'Alibour dédoublée rendront des services appréciables.

La croûte peut se reformer plusieurs fois mais chaque fois l'on constate qu'elle est moins épaisse, que la suppuration diminue et que l'écoulement de sérosité se tarit.

Enfin, entre la 6ème et la 8ème semaine la croutelle existante enlevée facilement sera remplacée par une cicatrice que témoignera de la guérison.

Pendant quelques temps encore la surface sera le siège de squames légères qui peu à peu disparaîtront.

Et alors, tandis que dans les formes bourgeonnantes la fonte progressive de la tumeur rendra aux organes leur forme et leur niveau primitifs dans les autres variétés l'arrêt du processus destructeur permettra aux tissus un bourgeonnement qui nivellera la lésion.

Il est bien entendu que toutes les indications données au sujet du temps d'application devront varier en plus ou en moins suivant l'activité plus ou moins grande du sel employé.

Il est aussi possible de procéder par méthode sèche, avec des temps d'application très courts et réitérés, on évite ainsi les réactions mais le traitement y perd en rapidité.

Les épithéliomas que nous avons eu à traiter siègeant presque tous à la face, la question de la cicatrice joue un rôle considérable et celles obtenues par la RADIUMTHERAPIE méritent qu'on s'y arrête un instant; dans tous les cas, on obtient une surface de réparation qui est lisse, de niveau avec les tissus sains périphériques; la coloration d'abord un peu blanchâtre ne tarde pas à prendre une teinte presque normale; au toucher, on a une sensation de souplesse appréciable dans le cas où les lésions siègent près des orifices et jamais en effet on a à faire à une cicatrice rétractile qui pourrait entraîner des déformations préjudiciables à l'esthétique.

Celle-ci est si parfaite que parfois il devient impossible de retrouver les traces de l'ancienne lésion.

Le second point intéressant concerne les épithéliomas de grandes dimensions.

Nous avons pu les faire bénéficier de la RADIUMTHERAPIE par l'emploi d'un appareil mesurant 6 cent. de diamètre, contenant 0.20 de sulfate de RADIUM ayant une activité de 500,000, une radiation extérieure 290,000 à 300,000 contenant 10% $\alpha$ 75 à 80% $\beta$ et 10 à 15% $\gamma$, et le champ du traitement de choix des petits épithéliomas peut s'élargir et englober les grands épithéliomas.

Le RADIUM, source merveilleuse de rayons curatifs, aura parfois l'avantage de pouvoir être utilisé là où d'autres traitements ne peuvent trouver leur emploi, grâce aux formes multiples que peuvent revêtir les appareils porteurs de RADIUM.

Un appareil terminé par une petite sphère nous a permis de traiter un cul de sac conjonctival envahi par un épithélioma d'abord cutané.

Une lame plate nous facilite le traitement de la face conjonctivale des paupières, et avec un appareil cylindrique nous pénétrons dans le conduit auditif.

L'application des appareils peut être directe; leur désinfection pouvant se faire d'une manière fort simple en les soumettent aux vapeurs de formol, mais, pour préserver le vernis qui quoique très résistant pourrait à la longue se détério-

rer du fait du contact prolongé avec des surfaces humides, nous enveloppons les appareils dans une feuille de baudruche.

La préservation des tissus sains, quànd les dimensions de l'appareil ne correspondent pas à celles de l'épithélioma, se fait avec une feuille de plomb ou de plomb caoutchouté dans laquelle on fait une lumière de la grandeur de la lésion.

Comme précaution complémentaire, il sera prudent d'interposer entre le plomb et la peau une feuille de papier ou d'aluminium car la face postérieure du plomb devient le siège d'une émission de rayons secondaires provenant de la transformation des rayons primaires.

Avant de conclure, nous signalerons la guérison obtenue dans un cas d'épithélioma bourgeonnant de la lèvre inférieure situé un quart sur la portion rouge de la lèvre et trois quart sur la face muqueuse buccale.

Les résultats que nous avons obtenus nous permettent:

1°. De confirmer la formule traitement de choix appliquée par M. Danlos au traitement des petits cancroides par le RADIUM.

2°. Ces résultats d'autre part élargissent le champ d'action du RADIUM et montrent qu'avec des appareils appropriés ce champ d'action s'étend à des épithéliomas qui comme siège, comme dimensions, comme caractères rebelles, dépassent les faits décrits jusqu'ici.

3°. Le RADIUM a une certaine élection sur la cellule cancéreuse, puisqu'en certain cas il peut la modifier ou la détruire sans produire d'ulcération cliniquement visible ni altérer sensiblement les tissus sains voisins.

4°. Les applications sont faciles, l'esth étiquedes tissus de réparation est très satisfaisante, elle atteint parfois la perfection.

5°. Notre étude réalise un premier essai de dosage.

Le RADIUM s'offre donc comme un moyen de plus qui vient d'une part s'ajouter aux traitements par les rayons X les ablations chirurgicales, les caustiques et qui d'autre part peut se combiner avec eux.

Il offre des avantages qui lui sont personnels pour certaines localisations peu accessibles aux autres moyens.

Un mot encore, l'intérêt qu'il y a à établir l'action curative

des rayonnements du RADIUM en un point quelconque de la pathologie cutanée élevant bien au-dessus du fait en lui-même la question de la RADIUMTHERAPIE.

En effet ne peut-on espérer que s'ils peuvent être portés dans les profondeurs de l économie, ces rayons ne puissent modifier aussi et de même façon les tissus morbides de nature analogue?

Or, c'est là un espoir qui n'est point actuellement sans base; nous avons pratiqué nombre d'injections souscutanées et intramusculaires de solutions contenant du RADIUM et nous avons constaté que ces injections étaient bien supportées, du moins aux doses utilisées; et nous avons d'autre part obtenu certains résultats encourageants que nous avons présentés à la Société de Dermatologie.

Mais cette question de la pénétration dans l'économie de l'énergie radio-active est fort complexe: elle comporte l'étude chimique d'énergie nouvelle, de l'émanation et de la radio-activité induite qui en dérive.

Aussi, cette étude ne peut espérer progresser qu'à la double condition d'être très étroitement aidée par la collaboration de laboratoires de Physique et Chimie et de Médecine Expérimentale et d'avoir à sa disposition les éléments de recherches nécessaires.

Ces conditions, nous les avons trouvées réunies au "LABORATOIRE BIOLOGIQUE DU RADIUM"; elles nous ont paru constituer des éléments d'études de haut intérêt et nous ont conduit à y poursuivre nos recherches.

*Discussion*

DR. JAY F. SCHAMBERG, of Philadelphia, said he wished to say a few words in regard to the therapeutic action of radium. He had listened with pleasure to Dr. Abbe's paper, and could confirm his results in the treatment of cutaneous growths, particularly superficial epitheliomata and warts. The question arose, however, did radium do any more in these conditions than the X-ray? Unless radium could be shown to be more efficient there would be no special advantage in preferring its use to that of the X-ray. The advantages of radium are in the simplicity of its application, and in the fact that it can be used in inaccessible cavities, where

the X-ray can not be applied. If we were able to bring to bear upon a malignant growth a sufficiently large volume of X-rays without causing the destruction of intervening healthy tissues, such malignant growths, wherever seated, might be destroyed and the disease cured. Possibly future developments in the technique of the application of the rays, perhaps by the interposition of proper filtration media, may accomplish something in this direction.

Dr. Schamberg exhibited a radiogram made with radium and one made with a low-power Crookes tube which illustrated the fact that the radium rays passed through silver much more readily than did the X-rays.

Dr. Schamberg also showed a radium holder for the treatment of favus and ringworm of the scalp. In view of Sabouraud's brilliant results with the X-rays in the treatment of these diseases, the speaker felt that it was worth while trying the use of radium in favus and ringworm. The quality and quantity of the rays given off from radium were so much more constant than from a Crookes tube and the application a process of such simplicity that this means of treatment, if successful, would have decided advantages over treatment with the X-rays.

Dr. H. Radcliffe-Crocker, of London, said that Sir William Ramsay, the eminent chemist, had discovered that with a solution of radium there was decomposition of water into oxygen and hydrogen, with certain emanations from the radium itself which had important physical properties, and that these emanations could be conveyed into a small bulb, together with the oxygen and hydrogen, and when the latter gases were again reduced to water the emanations could be dissolved. The speaker said he had employed this agent in a case of mycosis fungoides, and under it some of the lesions disappeared. In other cases, painful indurations would form at the point of the injections; these lasted several weeks and seemed to show that it was an agent of very great power. The speaker said he asked Sir William Ramsay how much radium emanation was in this bulb, and he replied that the amount was perhaps one-fortieth the size of a pin's head. Some of this agent was locally applied to a patch of psoriasis, which completely disappeared.

Dr. Crocker said he was unable, from the paucity of the material, to continue his experiments with this agent for any length of time, and at present it could simply be looked upon as a scientific curiosity.

DR. HERMAN LAWRENCE, of Melbourne, Australia, said that some years ago he was fortunate enough to obtain five specimens of radium with which he had treated a number of cases. In cases of rodent ulcer of the eyelid he regarded radium as the best method of treatment, and he had treated several such cases with entire satisfaction, particularly as it removed the lesion without leaving a scar. Also in seborrhœal keratosis senilis, in which cases there was a great tendency to atrophy of the skin after the use of the X-ray. The speaker said he had also employed radium to advantage in the treatment of pigmented moles and in seborrhœal eczema of the eyebrow, where the X-ray could not be well applied. His experience with radium had led him to the conclusion that it had its place in certain cases, just as the X-ray and the knife had.

DR. ROBERT ABBE, of New York, said that in the further discussion of his paper he hoped that something would be said about the pathological results of the radium treatment. In cases where lesions had disappeared without scarring, what was the pathological change that had occurred under the influence of the radium rays? They seemed to exert a specific action, unlike that of any other therapeutic agent except Roentgen rays.

## THE EFFECTS OF ROENTGEN RAYS ON PAGET'S DISEASE OF THE BREAST

BY DR. ROBERTO TERZAGHI AND PROFESSOR ROBERT CAMPANA, OF ROME

Some forms of apparent psoriatic eczema of the breast often do not receive medical attention, and may at times assume a chronic and malignant form, as an epithelial tumor, a form that has been named from the author first describing it, "Paget's Disease." It is not about the nature of this affection that we wish to speak, but simply of the results obtained with Roentgen rays in cases that threatened to assume the above-named form of disease.

We will quote, in this connection, an experiment with the relative results obtained by means of a certain number of applications of Roentgen rays in two cases.

CLINICAL HISTORY

Diagnosis—Eczema psoriasiform of the breast (incipient Paget's disease). Nutrition good, skeletal development regular, stature above the mean, skin somewhat pallid. The skin of the chest, the nipples, mammary areolæ, and adjacent parts showed a slightly humid maculo-squamous eruption; the scales were broad and coriaceous, indifferently adherent, and moist on the lower side, the underlying skin thickened, somewhat hardened, little movable in its different layers, and little developed on the subcutaneous nipple. Microscopic examination of the scales showed no pathogenic mycotic forms; there were the usual corpuscles described in psoriasis. On the rest of the body a few lentiform papules at very great intervals were found on the back and on the thighs. Slight itching sensation. Genital organs normal. No pathological product in the urine. Different functions normal.

The affection of the breasts began about three years previously and the patient had experienced no improvement from various methods of treatment undergone at her home.

From the first application of the rays, we began to notice a modification in the resistance of the cutaneous epithelial cells especially at the periphery of the mammary areola, first on one side, then on the other, and afterwards on the rest of the periphery of the nipple, which was the part most affected; more persistent adhesion of the epithelium, diminution of the dermic swelling; not remarkable, yet evident, return to their normal state of the lines and folds of the skin of the nipple; gradual diminution of the humid condition where the corneous stratum was still wanting.

A similar line of treatment was followed in another case with the same favorable results.

These two experiments do not seem to us without interest when we reflect on the extremely malignant course the process assumes in sequence to phases similar to the cases related by us.

*Discussion*

Dr. Neuberger, of Nuremberg, said that for several years he

had had under his observation a case of Paget's disease of the penis. This was a very rare condition, only two cases having been recorded prior to his own. The diagnosis in this case was confirmed by Prof. Neisser of Breslau. The effect of the X-ray treatment in this case was in the beginning very marked, and the affection apparently was cured. It subsequently recurred, however, and then the X-rays had seemingly lost their effect. The urethral orifice became narrowed so that micturition was impossible, and amputation finally became imperative.

Dr. Neuberger said the case was a good illustration of the fact that the X-rays could not always be depended on to exert a uniformly good effect, even in the same case. He had seen the same thing occur in mycosis fungoides, where for a time the lesions improved under the use of the rays, but which afterwards lost their effect.

# DIE INTRATUMORALE BESTRAHLUNG DER KREBSGESCHWÜLSTE ALS FORTSCHRITT DER RADIOTHERAPIE

VON DR. H. STREBEL, MÜNCHEN

Heute steht wohl die Tatsache fest, dass Röntgen-, Radium- und die von mir in die Therapie eingeführten äusseren Kathodenstrahlen imstande sind, das Gewebe von Krebs- und Sarkomgeschwülsten zur Rückbildung zu bringen. Ebenso fest steht aber auch die Tatsache, dass unsere heutige Bestrahlungstechnik nicht imstande ist, jede derartige Geschwulst in jeder Grösse und jedesmal zum Schwund zu bringen. Hier besteht eine Diskrepanz, die für uns Röntgentherapeuten recht ärgerlich ist. Wir alle kennen wohl die Tatsache, dass sich besonders bei den Sarkomen oft Geschwülste gleichen histologischen Charakters den Röntgenstrahlen gegenüber different verhalten, so dass die einen auf Bestrahlung gut zurückgehen, die anderen aber nicht. Den Grund dieser auffallenden Erscheinung kennen wir nicht. Zum Teil mag wohl der Umstand schuld daran sein, dass Fehler in der Technik vorliegen, denn nicht jede vorgenommene Bestrahlung muss schon deswegen wirksam sein, bloss weil das Rohr leuchtet. Ob das Rohr weich oder hart, alt oder neu, ob die für den einzel-

nen Fall empirisch notwendige Strahlendosis erreicht ist oder nicht, spielt natürlich hierbei eine grosse Rolle und wenn ein neugebackener Röntgentherapeut ein tüchtiger Chirurg oder Dermatologe ist, so braucht er deswegen nicht auch ohne Weiteres ein tüchtiger Röntgentherapeut zu sein. Aber diese Momente allein können nicht ausschlaggebend sein. Man hat lange erkannt, dass das Absorptionsverhältnis im bestrahlten Medium einen der wichtigsten Faktoren für das Gelingen der Heilabsichten darstellt. Man hat z. B. gefunden, dass in bestrahlten Krebsknoten alle Krebszellen in der Oberflächenschicht bis zu einer Tiefe von 3 mm. einschliesslich der Epidermis nicht mehr mikroskopisch nachweisbar sind, dass tiefer gelegene Krebszellen lediglich Schrumpfungserscheinungen zeigen, dass bei ca. 1 cm. Tiefe die Wirkung der Strahlung vollkommen aufhört, die Krebsnester also unbeeinflusst geblieben sind. Eine nur etwas ausgiebigere Tiefenwirkung bei intakter Epidermis ist nur unter Nekrotisierung und Erzeugung chronischer, schwer heilender, gefürchteter Geschwürsbildung möglich. Wir wissen durch Wichmann, Scholtz u. a., dass die Epidermis $\frac{1}{10}$ der gesamten Strahlung, die Kutis mehr als die Hälfte absorbiert. So grosse Strahlenmengen gehen also bei fokaler Bestrahlung—ganz abgesehen, dass nur ein Bruchteil der vom Rohr ausgeschickten Strahlung zur Wirkung kommt—nicht nur nutzlos verloren, sondern schädigen sogar die Haut und beeinträchtigen so den ganzen Effekt. Die Strahlendosis, welche bei fokaler Bestrahlungsweise von der Oberfläche, von aussen her durch die äussere Haut in die Tiefe zum Krebsgewebe selbst gelangt ist daher eine verschwindend kleine und da ebenfalls durch Wichmanns verdienstvolle Arbeit bekannt ist, dass Krebsgewebe selbst sehr stark absorbierend wirkt, so ist verständlich warum die bisherige Bestrahlungstechnik bei tiefsitzenden Tumoren so wenig erreicht hat. Man war oft sogar in der Lage sehen zu müssen, dass ein Krebstumor auf der einen Seite, wo er bestrahlt wurde, zurückging, nach der anderen Seite jedoch lustig weiterwucherte.

Mit Rücksicht auf diese Überlegungen habe ich schon 1903 mein Verfahren der intratumoralen Radiumbestrahlung (D. M. Z. 1903, No. 103) veröffentlicht, wobei das Radium

in die ausgebohrte Spitze eines Aluminiumstäbchens eingeschlossen mit Hilfe eines vorher in die Geschwulst selbst eingestochenen Troikarts direkt in das Zentrum der Geschwulst eingeführt wird. (Siehe auch Wichmann, D. M. W. 1906, No. 13.) Dadurch wird der Bestrahlungsrayon vergrössert nach allen Richtungen des Raumes gegenüber der nur nach vorne wirkenden fokalen, epidermatischen Applikation, welche die von der Haut abgewendete Strahlung nutzlos verlorengehen lässt; die Strahlung kann beliebig lange geschehen, da die Rücksichtnahme auf Verbrennungen der Haut wegfällt; die Strahlung wirkt vor allem viel intensiver, weil ja die übermässig starke, nutzlose Absorption in der Haut vollständig wegfällt. Dadurch wird mehr als die Hälfte der Strahlung wieder nutzbar verwertet d. h. es kommt die ganze Strahlung zur Wirkung auf das Krebsgewebe. Es ist mittelst dieser intratumoralen Applikation des Radium möglich, auch unter der Haut gelegene Metastasen, Drüsentumoren wirksam in Angriff zu nehmen.

Was die Röntgenstrahlen anlangt, so hat Wichmann den Versuch gemacht, durch in Fistelgänge, in den Tumor selbst eingeschobene Bleiglasröhren das pathologische Gewebe fokal zu bestrahlen. Man erreicht so jedoch nur kleine Bestrahlungsfelder, es wird immer nur ein Gewebszylinder bestrahlt, dessen Grössenverhältnisse dem Querschnitt des Rohrlumens entsprechen.

Es ist mir nun seit ca. 1 Jahr gelungen, auch die Röntgenstrahlen intratumoral zu applizieren, indem ich die Strahlungsquelle selbst in die Geschwulst hineinverlegte. Dies wird ermöglicht durch Konstruktion besonderer Röhren. Bekanntlich entstehen die Röntgenstrahlen als sekundäres Produkt der auf die Antikathode auftreffenden Kathodenstrahlen. Bei meinen neuen Röhren fällt die Spriegelantikathode bekannter Art weg und ich lasse die Kathodenstrahlen direkt auf die Glaswand an einer bestimmten Stelle fallen, diese dadurch zum Ausschicken von Röntgenstrahlen veranlassend. Gegenüber der Kathode ist nämlich die Glaswand zu einem spitz zulaufenden Rohr ausgezogen, auf dessen Ende die Kathodenstrahlen fallen und es so zum Leuchten bringen. Die von dieser "Glasantikathode" ausgehenden

Strahlen gehen entsprechend der Konstruktion nach allen Richtungen des Raumes auseinander. In neuester Zeit habe ich noch eine andere Konstruktion fertigen lassen, bei der in der Spitze eine Platinantikathode angebracht ist, wobei jedoch die ideale Zerstreuung der Röntgenstrahlung nach allen Richtungen nicht erreicht wird, sondern nur eine halbkugelige. Dieses Rohr kommt speziell für ganz oberflächlich unter der Haut gelegene kleine Tumoren als mehr "subkutane Applikationsweise" in Frage.

Bei der intratumoralen Applikation wird unter Adrenalin-Schleichinfiltration ein zweischneidiges Messer senkrecht oder in anderer Richtung, ganz entsprechend den anatomischen Verhältnissen, in den Tumor eingestochen, nachdem man vorher die eventuell noch intakte Haut beiseite gezogen hat. Lässt man die Haut nach geschehener Applikation entspannen, so wird die Einstichöffnung in die Haut seitlich von dem Wundgang im Tumor liegen, also einen guten Verschluss herbeiführen. Durch den in den Tumor führenden Stichkanal schiebt man das durch Formalin mit nachfolgender Alkoholabspülung desinfizierte Bestrahlungsrohr ein, spannt dasselbe entsprechend in ein Stativ und führt nun die Bestrahlung durch. Das Adrenalin sowohl, wie der vom Rohr auf das Gewebe selbst geübte Druck schaffen eine tunlichste Blutleere, wodurch ein weiterer Faktor für beträchtliche Absorption der Strahlung ausgeschaltet wird. Die von der Spitze des Rohres ausgehende Strahlung wirkt nach allen Richtungen des Raumes mit Ausnahme der des Rohrquerschnittes, so dass die Geschwulst von innen heraus in toto bestrahlt wird. Durch Kontrollversuche hat man sich mit Hilfe des Chromoradiometers von der Leistung des Rohres vorher überzeugt und gibt nun beispielsweise eine Dosis von ca. 8–10 H in einer Sitzung. Um das Rohr zu schonen und starke Erhitzung zu vermeiden, wendet man relativ schwache Ströme an. Im übrigen sorgt auch das strömende Blut im umgebenden Gewebe für Abkühlung des Rohres. Bei stärkerer Bestrahlung bildet sich natürlich als Folge der intensiven Bestrahlung ein nekrotischer Zylinder im Gewebe, speziell bei Verwendung eines weichen Rohres. Wie weit die Bestrahlungen auszudehnen sind, hängt ab von der Grösse und Situation des Tumors

und muss die Bestimmung darüber dem Verständnis und der Erfahrung des Röntgentherapeuten überlassen bleiben. Unter Umständen müssen mehrere Öffnungen für das Rohr angelegt werden. Bei kleinen Drüsentumoren, die direkt unter der Haut zu fühlen sind, macht man nur einen Schnitt durch die Haut und schiebt am besten das schon erwähnte, für "subkutane Bestrahlung" eigens angegebene Rohr durch, denselben so ein, dass die nur nach einer Seite wirkende Strahlung die Drüse trifft, die Haut aber geschont bleibt.

Man wird sich bald überzeugen, dass die durch vorstehende Methode der intratumoralen Bestrahlung hervorzubringenden Effekte rascher auftreten als bei der fokalen Bestrahlung, die natürlich bei offen anliegenden ulzerierten, nicht mehr von Haut bedeckten Tumoren ebenfalls angewendet wird.

Ich habe als Erster nachgewiesen, dass die durch ein Aluminiumfenster aus dem Vakuumrohr nach aussen geleiteten direkten "äusseren Kathodenstrahlen" eine Strahlung darstellen welche den Effekt der Röntgen- und Radiumstrahlen absolut an Stärke übertrifft und ebenso therapeutisch für Karzinombehandlung verwertbar ist. Ich habe natürlich auch darnach gestrebt, einen Modus zu finden, um auch diese überlegene Strahlengattung intratumoral zu verwenden und ist mir dies ebenfalls geglückt. Interessenten stehe ich gerne mit näheren Daten zu Diensten.

Vorliegende Arbeit soll lediglich auf die neue Methode, die ich unbedingt als Fortschritt der radiotherapeutischen Technik betrachte, hinweisen und Interessenten veranlassen, sie nachzuprüfen.

Ich möchte nun noch auf einige wichtige Punkte hinweisen.

Durch die schöne Arbeit von Lomer (Zur Frage der Heilbarkeit des Karzinoms; in Zeitschr. f. Geburtsh. u. Gynäkol. 1903, 50. Bd., 2. H.) wird der Gedanke nahegelegt, dass alle jene Momente, welche Blutzerfall im Gefolge haben, wie Brandwunden, schwere Blutungen, Vergiftungen mit Arsen, Kali chloricum, Fieber, langdauernde Eiterungen, hämolytische Sera usw., auch eine mehr oder minder ausgesprochene Einschmelzung der Krebstumoren nach sich ziehen.

Durch die Arbeiten von Schwarz, Werner, Exner, Heineke, Benjamin u. a. ist bewiesen, dass lokale und allgemeine Be-

strahlungen mit Röntgenstrahlen eine Alteration des Blutkörpers hervorbringen und zwar dahingehend, dass beide Bestrahlungsweisen Hyperleukozytose und Lymphopenie zur Folge haben, dass als Folge der Bestrahlung im Gewebe ein Stoff auftritt, dem gegenüber sich die polynukleären Leukozyten chemotaktisch positiv verhalten unter Auftreten von Cholin, dass unter Bestrahlung der Leukozytenbildungsstätten unter Behinderung der Neuproduktion weisser Blutkörperchen Leukopenie ensteht.

Es ist nun daran zu denken, ob—ganz abgesehen von der eventuellen direkten Beeinflussung der Krebszellen durch die Bestrahlung—sich der Effekt einer Röntgenbestrahlung auf karzinomatöses Gewebe dadurch steigern liesse, dass man die Bestrahlungen nicht so ängstlich allein auf den Tumor und seine Grenzen beschränkt, sondern indem man grössere Körperteile mit in den Bereich der Bestrahlung zieht, in der Annahme, dass die durch allgemeine Bestrahlung ausgelösten hämolytischen Vorgänge in ihrer Rückwirkung sich zu den Effekten der lokalen Bestrahlung des Tumors hinzuaddieren möchten. Ich für meinen Teil habe auf Grund einer kleinen Anzahl von Fällen den Eindruck gewonnen, als ob tatsächlich durch eine solche kombinierte lokale und allgemeine Bestrahlung ein rascherer und umfassenderer Gang der Absorption der Krebsmassen stattfände.

Da derartige allgemeine Bestrahlungen, vorsichtig ausgeführt, keine Hautreaktionen auslösen, so sehe ich nicht ein, warum man sie nicht versuchen sollte. Es wäre vielleicht sogar angezeigt, die blutbildenden Organe direkt mitzubestrahlen, weil möglicherweise die durch hämolytische Vorgänge ausgelösten Blutveränderungen sich zu einer Art Serumtherapie des Karzinoms gestalten mögen. Für das zuletzt Vorgebrachte habe ich natürlich zunächst keine Beweise.

Ich möchte sogar noch einen Schritt weiter gehen und die Hämolyse durch innere und äussere Applikation von chlorsaurem Kali unterstützen (nach dem Vorgang von Lomer, Burow, Charcot, Bergeron, Leblanc, Milon, Cooke, Michon), um die Arbeit der Röntgenstrahlen vom aussen her recht kräftig zu unterstüszen. Als Radiotherapeut soll man nicht nur in seine Röntgenstrahlen verliebt sein und nicht die

Möglichkeit ausser acht lassen, dass man durch die Kombination der Röntgenstrahlenwirkung mit anderen therapeutischen Gesichtspunkten vielleicht viel profitieren kann. Ich möchte deshalb darauf hinweisen, dass man die durch zahlreiche Beispiele (Schmidts Jahrb. 1865, I, S. 170) illustrierte Beeinflussung von Karzinomen durch die wahrscheinlich hämolytische Wirkung (Lomer) des chlorsauren Kali mit der ebenfalls anerkannten der Radiotherapie verbinden kann. Der vernünftige Kritiker wird darin keine Bankerotterklärung der Radiotherapie sehen, sondern das Bedürfnis des Praktikers, unter allen Umständen, mit Verzicht auf Prinzipienreiterei, nur das Wohl der armen Kranken zu erstreben.

## X-RAY BATHS AND DERMAMETROPATHISM

By Dr. Herman Lawrence, of Melbourne, Australia

*X-ray Baths.*—What I have termed an X-ray bath is a method of applying the X-rays so that the skin of the whole body may be exposed to them at one time. As shown in the photograph (Plate xxiv), there are six tubes, connected to six separate coils, each coil having its own break and its own primary current supply. At the present time, I often work coils in series and tubes in series—that is, I work two coils with one primary current, using one break, and I sometimes work two or even three tubes in series connected with a twenty-inch coil. But I have not found tubes in series altogether satisfactory. The patient stands with the tubes, three upon either side, and at a distance of twenty inches from each tube. He then has four exposures of three minutes each, facing north for first exposure, south for the next exposure, and then east and west for the other two exposures. The reason for this order of exposure is that the tubes must be altered as regards distance from the patient, for an antero-posterior exposure as compared with exposure to each side of the patient. By altering the position of the patient in this way, any unevenness of dosage of the X-rays from the separate tubes is more or less equalized as regards their general effect upon his body.

The patient is undressed and wrapped in a white sheet. A lead foil mask is used to protect the head and there is also lead protection for the genital organs. He should stand in a cage made of cane, and a nurse stands by to rotate him at the end of each three minutes' exposure. I operate the bath behind a lead-lined stand with crown-glass window. The nurse has similar apparatus for her protection. In children I use only four tubes. As regards dosage, I use radiometer discs in order to watch the effect of the rays upon them from each tube, but, of course, I do not in any way give a dose such as we use for depilation in ringworm. I may say that I have treated some five hundred cases of skin disease by radiotherapy, and I am of the opinion that, where marked effects by the X-rays are desired in a short time (for in Australia patients will come hundreds of miles and cannot remain for more than a week or two), one can get better results by the method of giving several mild exposures, as compared with the method of giving a heavy dose and then waiting to see the result upon the patient's skin.

I am ready to admit the former method requires a good deal of experience upon the part of the operator, and I would not recommend anyone to try the X-ray bath exposure I am now describing unless he thoroughly understands the danger of an over-exposure. One can easily understand that a generalized reaction from an over-exposure, or from too great an accumulation of the X-ray effect upon the skin, could be followed by a fatal result. I myself have worked the method up gradually from the simple tube. I frequently use two sets of two tubes, as in treating two arms or two legs. Here there is a great saving of time, for instead of giving four exposures of ten minutes (if that be about the time required for a certain dose) to each limb, the whole treatment can be carried out in eight minutes if the tubes are placed at the same distance as when the single tube is applied.

I have used the bath successfully in mycosis fungoides, generalized eczema and psoriasis, obstinate urticaria and pruritus. In children when lichen urticatus is very troublesome it has been followed by quick relief from symptoms.

I will now briefly relate four cases treated by the bath.

CASE 1.—Girl, aged eighteen. Mother states her daughter had been to school in Europe for two years; she developed a severe attack of eczema and was under treatment in London for six months. She did not get better and could not remain away from Australia any longer. On reaching Melbourne she was recommended to consult me as to having X-ray bath treatment. When I examined her she had a bad catarrhal inflammation of the skin of both arms and legs; her face and trunk were slightly affected. I saw by her prescriptions that she had had the best of treatment, and I thought in her case I was justified in using the X-ray bath. She had three baths the first two weeks, and then two tube exposures for three weeks; by this time the eczema was so subdued I allowed her to return home. Her recovery was complete and there has not been any return of the eczema since.

CASE 2.—Man, aged forty-five. Psoriasis for past twenty-five years; had been to Europe upon two occasions for treatment which relieved but did not cure him. He said he was discouraged with the treatment which had been employed as the ointment spoiled his clothes, and for the past two or three years he was content to put up with the psoriasis, merely using olive oil and baths to lessen the scaling. He was a relative of the girl just mentioned, and said he had come to know if I thought the X-ray bath could be of value to him. I undertook the case, and in six weeks he was free of the psoriasis. He was so pleased that he continued to have an X-ray bath once a month for some time. However, in spite of treatment, guttate spots appeared occasionally. To these I applied radium. I have five specimens and we treated several of these spots at one time. My radium is of high radio-activity, and fifteen minutes was, in his case, quite sufficient exposure at a time. He was so pleased with the result that he bought a specimen of radium for himself. It is now two years since I first treated him, and with his specimen of radium, he tells me, he keeps quite free from the disease. No other treatment was used during the X-ray bath treatment.

CASE 3.—Urticaria. Sister of medical man, a very bad case; all treatment failed to relieve her, and her health suffered from broken rest. With X-ray baths she was relieved of her

trouble in two weeks, and went on a trip for her health, which was not good. I have not heard whether she had any relapse of the urticaria. No other therapy was used during the X-ray bath treatment.

CASE 4.—Mycosis fungoides. Treatment by X-rays for three weeks, interval of three weeks, and then another treatment for two weeks by double tubes. Tumors all resolved. Case was only recently treated, so it is too early for relapse at present.

## DERMAMETROPATHISM

*Dermametropathism* is a word I have coined, and is meant to express a system of measuring a disease of the skin. The system is based upon the result produced upon the skin by pressure with a smooth instrument, such as a pen-handle. The same instrument must be used and the same amount of pressure applied, as the varying results obtainable in different diseases are compared the one with the other, or the result obtained upon the diseased part of the skin is compared with that obtained upon the skin which is not diseased. Now if the instrument used be too rough or too smooth, or not applied with a somewhat equal amount of pressure, the varying results obtained as evident to the eye could not be made use of. One must compare the result obtained upon the diseased portion of the skin with that obtained upon the normal skin as produced by similar conditions.

My attention was first drawn to this subject some years ago by a patient stating that she noticed when she scratched herself she produced white lines upon the skin, whereas if her sisters or brothers scratched their skin they produced red lines.

Her case was one of almost universal eczema dating from infancy with marked pruritus and velvety thickening of the skin, being especially so upon the extensor aspects of the limbs.

I applied the pen-handle to her skin, which was followed by the production of white lines. I then similarly examined the skins of the other members of the family, two older and

three younger than herself, and in all of them the pressure with the pen-handle was followed by the production of red lines upon the skin.

I watched for similar cases of eczema and in four such cases, whose ages varied from twenty to forty-five years, the same results were obtained on the application of pressure to the skin.

I then noticed, and the patients themselves agreed with my observations, that the white lines were more markedly evident and lasted longer when the disease was more exaggerated. I began examining all varieties of cutaneous affections by this method, which I named "skin markings." In a great number of skin diseases so examined, the results obtained did not appear to be of any special interest; but, on the other hand, in a certain number of cases they seemed to me to be of considerable interest, and so I have taken this opportunity of bringing this subject under your notice. By this method there are seven distinct lines or marks obtainable, and it is by observing the variability of these lines, the different combinations they enter into, and the difference in time that they remain visible that one can apparently make use of them.

No. 1 line, or marking, is produced by drawing with slight pressure a smoothly rounded off pen-handle across the skin. You will notice a white line. Immediate pressure line.

No. 2 line, or marking, is a red line, which usually follows in a few seconds after No. 1 line. It is about the same width as the end of the instrument or marker used.

No. 3 line is also a red line, but an exaggerated one, being two or three times as broad as the end of the marker applied.

No. 4 line is a red line with a white line upon either side of it.

No. 5 line is a white line, so that in this case one has two white lines, No. 1 line being followed by a white line. It is not a raised line.

No. 6 line is a raised line which follows upon a red line, so that in this case, there is a white line followed by a red line, and then a raised line is produced.

No. 7 is also a raised line, but it follows upon a white line, either No. 1 line or No. 5 line.

These lines or markings are usually much more easily observed upon the trunk than upon the limbs.

Now as these lines or markings vary as regards their quality, and also as regards the time they last, I have placed the + or – sign before the line or marking, in order to express whether the line or marking is greater or less than the usual marking. For instance, if you draw a pen-handle across the back of the hands when they are red and swollen with the cold, the white line is very marked, and in such a condition one would call it + 1. And as regards the time the marks last I have used the same signs, + or –, but placed after the line. For instance if No. 6 line lasted for forty-five minutes, then the marking would read 6 +. Here the + is equal to forty-five minutes.

*What I contend is that by this method of clinical observation, which I call "skin marking," certain markings indicate the chronicity of certain diseases and give warning in some cases of the near onset of a relapse of the disease; that certain markings explain the exaggeration of the symptoms in some individuals, and that probably suitable treatment may be worked out by observing the effect of the markings upon the skin.*

Now for the statement that certain markings explain the exaggeration of the symptoms in some individuals.

Take for instance persons troubled with acne vulgaris. Why is it that, in some cases, there is very little congestion or inflammation around the comedones or plugs of sebaceous matter, while in other cases there is marked exudation and papule formation? I contend that in some cases it is coincidental with an increased irritability of the tissues in the latter subjects, which irritability can in some cases be calculated or evidenced by this system of skin markings. I have proved this fact in many cases, and will try to explain what I mean.

Two girls, twins, aged sixteen years, were treated by me for bad acne of the face. We will call them A. and B. Case A. marked +1, +3, and Case B. marked +1, +3 +, +6 +. You notice that Case B. marks + after 3 and 6 +, in addition to the markings of Case A. The + after 3 and 6 represent the increased irritability of the tissues, and is the reason

why in these two cases there is so much more disturbance around the acne plug in Case B. And as I will tell you presently when Case B. ceased to mark + after 3 and 6, then the degree of congestion became the same in Case B. as in Case A. In Case A. the papules were not accompanied by so much congestion and inflammation as in Case B. Case A. proved far more amenable to treatment than Case B. On removing with an acne expressor the sebaceous plugs, the skin remained practically undisturbed in Case A., but in Case B. the removal of the sebaceous plug would be followed by a small round lump. So that in Case B., besides the increased vasodilatation, you had also a determination of fluid around the sebaceous plug, which formed, of course, a suitable soil for micro-organisms; and this condition was the cause of Case B. having more exaggerated symptoms and being more intractable to treatment than Case A.

This difference in these cases lasted for more than twelve months, when I noticed Case B. showed much less disturbance around the acne plugs, and also the formation of small lumps (acne urticata) had ceased to be obtainable, and upon marking the skin the mark was +1, +3, as in Case A. I do not venture an opinion upon the cause of the increased irritability of the tissues, or the reason for the cessation of the production of line 6 + in case B., but I hold that a certain marking in Case B. coexisted with the exaggeration of the symptoms in this case.

I have several exaggerated cases of acne vulgaris which have line 6, and in some it is limited to the acne regions. But all severe cases of acne vulgaris do not necessarily have the line 6, but if it is not present, then there is generally the boggy condition of the skin previously described or marked vasodilatation, with increased irritability of the sensory nerves to the skin.

*Certain markings indicate the chronicity and the near approach of a relapse of the disease.*

What I mean is this: that in certain cases there are certain markings which are obtainable as long as the disease remains, and more than this that the markings in some cases advise the near approach of an attack. The marking in the case I will now relate is 1, +5, that is, the immediate pressure

line is 1, and it is presently followed by a well-marked white line, which is not a raised line; and when the disease is improving the line or marking alters to 1, − 2, − 5, which means the marking is becoming more like the normal marking, 1, 2.

The following case illustrates the coincidental presence of the line 1, +5, and fairly generalized eczema occurring during the winter months.

A. G., male, aged seventeen years, with a history of eczema of the trunk, arms, and face every winter since infancy. When I examined him in June (winter in Australia) he marked 1, +5 upon all parts of the trunk, face, and arms, with the slightest attempt of vaso-dilatation upon the abdomen. He marked 1, 4 upon the thighs, which were not troubled with eczema. In spite of treatment his eczema proved most troublesome during the winter months, but as summer set in, the eczema cleared up and the markings gradually changed from 1, +5 to 1, − 2, − 5. I marked his skin in January, and he marked 1, − 2 fairly well all over the chest, back, and abdomen, and his eczema had all cleared up. In April of this year his marking relapsed to 1, + 5, and *within three weeks the eczema again appeared.*

What I would draw your attention to more particularly is this, that this patient who more or less had learned the value of the markings upon the skin consulted me and reported that his markings had become worse, and supposed that a fresh attack of eczema was imminent, which actually proved to be correct—that is to say, in his case a marking 1, − 2, − 5 became 1, + 5 upon the skin before the inflammation as far as the eye could discern had developed, and before any symptom of irritation was felt. I hold that this marking 1, +5 prognosed the near onset of the attack in this particular case. The patient, of course, thought he should have been treated as soon as what he called the eczema marking appeared, but there were no symptoms or evidence of the disease to treat. I think the marking in this case is suggestive as regards the etiology of this form of eczema.

As regards dermametropathism, or measuring the disease

by this method, I would mention the following cases. A case of unilateral hyperidrosis of the face and head, right side. The patient had to mop the right side of his face and head continually as the sweat kept on accumulating upon these parts. His marking upon the right side of the face was, 1, +3 +; here the + after 3 represented twenty-five minutes. The left side marked normally 1, 2. When examined some two months afterward, the sweating had become much less, and although he still had No. 3 line, it lasted for only ten minutes, and when he gets well of the hyperidrosis the marking upon the right side of his face will apparently become the same as upon the left side.

*Urticaria pigmentosa.*—In three typical cases the marking has been +1, 7 + upon the spots, and 1, — 2 upon the skin between the spots. That is, on marking the spots there develops a well-marked white pressure line, followed by a raised line, and upon the skin between the spots a white line is followed by an indistinct red one. In one of my cases, which has been under observation for three years, the child's condition has considerably improved, and in this case the marking has likewise altered considerably in the direction of becoming a normal one. That is, the + after 7 in this child at three years of age was equal to twenty-five minutes; whereas at six years of age the + after 7 was only five minutes; and the amount of redness which may be produced by friction between the spots has likewise markedly increased.

*Acute dermatitis of the face and hands.*—A man suffered from this trouble whenever he worked in the tramway factory sheds, the particular timber affecting him being blackwood. Upon its being sawn up, the dust, flying upon his hands and face, would cause an acute dermatitis with much swelling, and he would have to leave off working. For twelve months he was always subject to this dermatitis, and the question arose whether he would not have to change his occupation. During all of this time his skin gave a raised line, urticaria factitia, both during and between the attacks, when it was apparently quite well. But, fortunately, the skin at last ceased to give a raised line or urticaria factitia, when the pen-handle was pressed upon it, and then the man ceased

to suffer from his dermatitis due to the blackwood—that is to say, all the time his skin was in a condition in which urticaria factitia could be produced he was unable to work in the factory sheds without getting an acute dermatitis of the exposed parts; but when the skin ceased to give a raised line upon being marked, then he could work in the blackwood dust with impunity. After being free from this idiosyncrasy to the blackwood dust for eight months, his skin unfortunately again assumed the condition in which pressure upon it with the marker produced urticaria factitia, and he once more became subject to the dermatitis. I have examined other cases in which patients have been especially prone to dermatitis from certain plants, as in one case due to the primula obconica but in this instance an accompanying condition of urticaria factitia was absent.

*Mumps.*—Alteration of markings due to mumps. Two children, whose markings had been frequently taken during two years, and in whom they always remained the same showed complete alteration during the acute stage of mumps.

1st case: Boy, aged twelve, markings always a white line followed by a red line, 1, 2. When he developed mumps his marking was a well defined urticaria factitia, a line raised as high as a small pen-handle; as the disease disappeared his marking returned to its usual or normal condition.

2d case: Girl, aged sixteen, markings always 1, 2 upon the trunk, arms, and thighs; but upon the face the marking was 1, — 5. That is, she marked normally upon the body and limbs, but over the skin of her face there was a white line followed by a feeble white line. During an attack of mumps urticaria factitia was produced upon the trunk and limbs where she had had the normal marking, but upon the face the marking 1, — 5 changed to 1, + 5 +, so that upon the face she gave a well-marked white line lasting some minutes. I think in this case the exaggeration of the abnormal marking upon the face, instead of a tendency to the condition of urticaria factitia as upon the trunk, under the influence of mumps, is difficult to understand.

*Scleroderma; Morphœa Patches.*—In several cases the marking has been 1, 5 over the patch, and 1, 2 over the skin

PLATE XXIV.—To Illustrate Dr. Herman Lawrence's Article.

not affected. That is, there has been a white line on pressure followed by a white line, where the skin was affected by the disease, and the skin beyond the patch was not altered from the patient's usual marking. This does not occur in leukoderma, where the marking over the leukodermic patch is always the same as the marking beyond the patch. Of course one would not expect any alteration in leukoderma. The following case illustrates my method: Patient with sclerodermic patches of only a few months' duration, situated upon the back and chest. Upon marking the skin over the affected areas there was a white line followed by a white line. Just immediately beyond the patch there was a white line followed by a faint red one, which later on became a white line and upon the healthy skin the marking was a white line followed by a red one. In this patient by taking the autogram in full, and comparing it with the autogram at the patient's next visit, after an interval of four weeks, I was able to answer the question patients frequently ask—that is: Is there an improvement or not in the skin troubles? As far as one could see, or feel, there was not any appreciable alteration in this patient's cutaneous affection; but on taking the autogram in detail, I was able to form the opinion that the condition was getting worse instead of better, and this prognosis was supported after another two months' interval, when the spread of the sclerodermic patches had become quite apparent to the sight and touch. The patient then remained in town and with a course of massage and other treatment, the autogram improved, and was followed by evident improvement in the sclerodermic patches. The autograms read as follows:

First visit (October):

1 (8-10 sec.), + 5 ( + = 10 min.) over patch.

1 (3-5 sec.), — 2 (5 sec.) — 5 (lasting 3 min.) just beyond patch.

1 (10-15 sec.), 2 (lasting 10 min.), general skin marking.

Second visit (November):

1 (5-8), + 5 ( + = 12 min.), over patch.

1 (2-5 sec.), — 2 (3 = 5 sec.) = 5 (6 min.) just beyond patch.

1 (10-15 sec.), 2 (lasting 10 min.) general skin marking.

Third visit (January):

1 (5-8 sec.), + 5 ( + = 15 min.) over what is now a muc larger patch of scleroderma.

1 (3-5 sec.), — 2 (4–5 sec.), — 5 lasting 4 min., over th skin surrounding new patch.

1 (10-12 sec.), 2 (lasting about 10 min.), general ski marking.

In this patient the patches were situated upon the trun of the body and of recent formation. In several chroni cases of scleroderma I have not been able to obtain marking as in the case just related, beyond the white line followed b a white line over the diseased areas, 1, 5. In the case c patient just described she has recovered from her skin troubl and the skin marks practically normal all over. That is:

1 (10-12), 2 (lasting about 10 min.) over the back an chest.

## ROENTGEN RAY IN EPITHELIOMA. REPORT OF A SERIES OF CASES TREATED MORE THAN THREE YEARS AGO

By Dr. William Allen Pusey, of Chicago

No one doubts that epitheliomata can be healed wit X-rays. The statement, however, is frequently made tha the results are not as permanent as when the lesions ar radically destroyed by other methods of treatment. Thi is an important matter to settle, and we are now nearing th time when the permanency of the result can be established I desire, therefore, to report the results in my series of epithe liomata treated with X-rays more than three years previou to July, 1907.

The number of cases is too large to recite each case in detail but the results can be summarized quickly. The details of som of the cases also are indicated by the photographs presented here with, (Plates xxv-xxviii), all of them in pairs, showing the orig inal lesion and the result after three or more years. Lack o space prevents the publication of the photographs of about thirt additional cases. I have confined my consideration to epithe

liomata. I have not included in my list epitheliomata which at the time of beginning treatment were complicated by demonstrable carcinoma in the neighboring glands. I have thus excluded a few hopeless cases of epithelioma of the penis with metastatic complications, and numerous cases of carcinoma of the neck following epithelioma about the face and mouth. I have, however, excluded no case in which glandular metastases developed after treatment was begun; fortunately, I had no such accident. I have also not excluded any cases where the spread of the disease has been by continuity. The list, therefore, includes many hopeless cases in which there had been wide involvement of the orbit, other cases with deep destruction of the tissues of the face from the spread of lesions originally involving the nose only, and other extensive and very destructive cases. I may also say that in accepting the cases no effort was made at selection; the most hopeless ones have been treated regardless of a record whenever there was the remotest possibility of giving the patients any sort of benefit.

The total number of epitheliomata in this list which I treated with X-rays more than three years ago is one hundred and nineteen. Of these cases I have been unable to obtain the subsequent histories of only eight; of these eight, five I think, should have been successes and three failures, but, throwing the entire number out of consideration, it leaves one hundred and eleven patients treated more than three years ago, whose histories up to July of this year are known.

Of these one hundred and eleven patients eighty either remain well to-day, have died without recurrence of epithelioma, or remained well more than three years after a healthy scar was produced, but can not now be located. As a matter of fact, sixty-six of these eighty patients were living with healthy scars in April last. Six were living without recurrence at least three years after they finished treatment. Eight of them are dead; two died from pneumonia, and one patient each from acute leukæmia, apoplexy, nephritis, heart disease, acute bowel trouble, and carcinoma of the uterus, the last mentioned having symptoms before the treatment of the lesion on her face was begun. This patient died about a

year after the lesion on her face healed, and she was the only one who died within a short time after the treatment of her epithelioma. Two other patients who are now dead lived from one and one-half to three and one-half years. Omitting these eight patients who died from other diseases, one patient has been well over six years, eleven patients are well over five years, twenty-two over four years, thirty-two over three years, and six were well more than three years after treatment, but whether they are now living I do not know.

The diagnosis in the cases is, I believe, beyond question. In all of my earlier cases the diagnosis was confirmed by microscopic examination. In the later cases microscopic examinations were made when there was any possible room for doubt. The unmistakable character of the lesions and the variety of the lesions treated are evident to the eye in almost all of the photographs shown. They varied from the most minute epitheliomata, about the size of a small pea, to lesions above the size of a hand. Many of the worst cases were primary as regards operation, but of the eighty successful ones forty-one were primary and thirty-nine were cases which had recurred after previous radical treatment, usually operation.

For the purpose of further analysis I have divided all of the cases into the following four groups: (1) Successful, eighty cases; (2) practically successful, two cases; (3) distinctly benefited, seventeen cases; (4) failures, twelve cases; total, one hundred and eleven cases.

### PRACTICALLY SUCCESSFUL

In the group of practically successful cases are included two cases. The first case was a large epithelioma of the shoulder.

This patient had had for twenty years a rodent ulcer, which at one time had reached an enormous extent, involving at least a square foot of the shoulder and back. Under persistent treatment, extending over years, in the hands of the most competent men, it had been reduced in size to about that of the palm of the hand, but it had never been healed. This

was the first case that I treated with the X-rays, and the treatment was undertaken because the case was regarded as hopeless.

A symptomatic cure was obtained in May, 1901. Fifteen months after the disappearance of her epithelioma, this patient, a very old woman, received an injury from a fall from which she was compelled to go to bed, and in a few days died from pneumonia. At the time of her death there was no evidence of recurrence, except a point on her shoulder, which looked suspicious. I was able to obtain the skin from this shoulder, and it showed healthy scar tissue, except at this suspicious point, where I found an epitheliomatous mass the size of half a wheat grain. This could have been destroyed readily by X-rays or a caustic or other destructive agent.

The second case was epithelioma involving the entire concha and the outer half of the external auditory canal. A superficial ulceration, the size of a dime, has never disappeared in this case, and it is, I believe, an X-ray burn and not an epithelioma. It showed no tendency to grow when I last saw the patient a year ago. In this case the lesion had been converted into a trivial ulcer with no tendency to spread, and the improvement had persisted for over four years. This case also was an epithelioma recurrent after operation.

### DISTINCTLY BENEFITED

Seventeen cases are classed as having been distinctly benefited. The improvement in each of these cases consisted in checking the course of the disease for a year or more, except in the case of a man over eighty, who died within the year, and in prolonging the patient's life, in comfort, for at least that length of time. Every one of the cases was an epithelioma which had recurred after previous operation, and practically all were hopeless of other relief. Seven of these cases were epitheliomata which had begun at the inner canthus and had spread into the orbit and on to the nose. In four of these the disease had extended so far into the orbit that the eye had been destroyed; in two the bones of the ridge of the nose were deeply involved, and the orbit infiltrated to the

point where operation was regarded by surgeons who referred the cases as impractical; in one the disease had involved the orbit and the adjacent bone to the point where the eye was fixed in the carcinomatous tissue. In this case the patient had only the one eye, the other having been lost in childhood, so that checking the course of the disease was of vital benefit. This patient came under treatment in June, 1903; the disease was held in check sufficiently for his eye to remain useful up to December, 1906, over three years; since that time the eye has been destroyed.

Four of the seventeen cases were epitheliomata, the size of a large coin, involving the temple and the outer canthus of the eye and spreading into the orbital tissue. In each of these cases the external lesion was healed. In one case the disease recurred on the temple within a year. A radical operation was attempted by a surgeon and the patient died in a few days from aspiration pneumonia. In the second case a large external epithelioma was made to disappear almost completely, and extension was checked for a year and a half, until the patient's death from chronic spinal disease. The two other patients are still living. One is a very feeble old man whose external lesion was healed in August, 1903. Two years later this had not again ulcerated, but I learn that it has since broken down. The other patient was treated in July, 1903. The lesion on the temple was converted into a healthy scar, but the intra-orbital mass did not disappear. The patient is still living, but he has become an Eddyite and I cannot learn the present condition.

Case 12 of this group is an epithelioma of twenty years' duration, recurrent after numerous operations, and involving both alæ nasi and the adjacent portions of the cheeks. This patient came under treatment in April, 1901. She was symptomatically cured within a few months, except for two minute suspicious nodules near the nose, one on the right side of the face, the other on the left. The one on the right side of the face was excised one year later, and the disease has not recurred on that side. The suspicious nodule on the left side of the face remained quiet for five years; within the last year however, it has grown somewhat, and in July, 1907, this was

removed by operation. This patient was practically well for five years, but has a small lesion on the left ala nasi now.

Cases 13 and 14 in this group were very extensive epitheliomata which had entirely resisted other forms of treatment. Case 13 was an epithelioma, in an old woman, involving almost the entire forehead, the upper and lower lids and the eye on the left side, the upper lid of the other eye, and the upper half of the nose. This patient came under treatment in May, 1902. The lesions were entirely healed for over four years. In 1906, four and one-half years after the case came under treatment, an ulcer developed in the centre of the forehead. This patient is still under my care with an ulcer in the centre of the forehead, which has entirely destroyed the frontal bone over an area the size of a silver dollar, but under the X-ray exposure has remained quiescent for months. In this case the patient was symptomatically relieved of a hideous epithelioma for four and one-half years, and her life has been prolonged in comparative comfort to the present time.

Case 14 was an epithelioma larger than the hand and very deep, situated over the middle of the spine, in an old woman. The patient came under treatment in June, 1904, and the lesion was reduced to a painless, apparently benign, ulcer the size of three fingers. This improvement was maintained in the summer of 1906, when the last report was received.

Case 15 was an epithelioma of the upper lip, which had perforated the lip and involved the septum nasi, in a woman over 90 years old and extremely feeble. In this case complete healing was obtained, which persisted for about a year. The disease then recurred without further treatment, but under treatment was held in check until the patient's death from natural causes two years after coming under treatment.

Case 16 was one of deep-seated epithelioma, the size of a silver dollar, in the centre of the cheek, in a very old woman. This patient came under treatment in April, 1904. The lesion was made to disappear, except for some subcutaneous induration. Regrowth did not begin until a year later, but when the tumor recurred it caused the patient's death.

Case 17 was an epithelioma of the lower eyelid which came under treatment in December, 1903. Healing of the lesion

was produced, but later a recurrence developed for which the patient was treated by another physician with the X-rays. At the present time he remains well, nearly four years since he came under my care. This case is actually a success, but not mine.

Although these cases can not be classed as technically successful, the improvement obtained in many of them is, I believe, one of the strongest illustrations of the usefulness of X-rays. The cases, as a whole, represent a class which is utterly hopeless, with extension of the disease so widespread that complete removal by surgical measures is practically impossible. To take such patients and improve their lesions to the point where life is bearable or they are symptomatically relieved, is to do what can be done in no other way.

### FAILURES

Twelve cases are classed as failures. Nine of these were recurrent after previous operation and three were primary. Eight of the twelve cases were hopeless from the standpoint of surgical interference. Five of these eight were epitheliomata which had spread deeply into the orbit. Two were epitheliomata which had completely destroyed the nose and had extended deeply into the bones of the face. One case was an epithelioma which had destroyed the lower half of the ear and had invaded the neck. Seven of these eight patients were treated for but a short time and really should not be considered. The eighth case, a very extensive epithelioma which had destroyed the nose, was kept under treatment until the patient's death without appreciable improvement from the use of X-rays. The ninth case of the twelve failures was an epithelioma in a man, aged 60, which had destroyed the lower eyelid but did not show palpable evidences of involvement of the orbit; healing was produced in this case and the patient then abandoned treatment. Two years later I was informed that there was evidence of recurrence. The tenth case was a large epithelioma of the back of the hand in a man aged 68, referred to me by a surgeon. Temporary healing was produced, recurrence took place in the course

PLATE XXV.—To Illustrate Dr. W. A Pusey's Article.

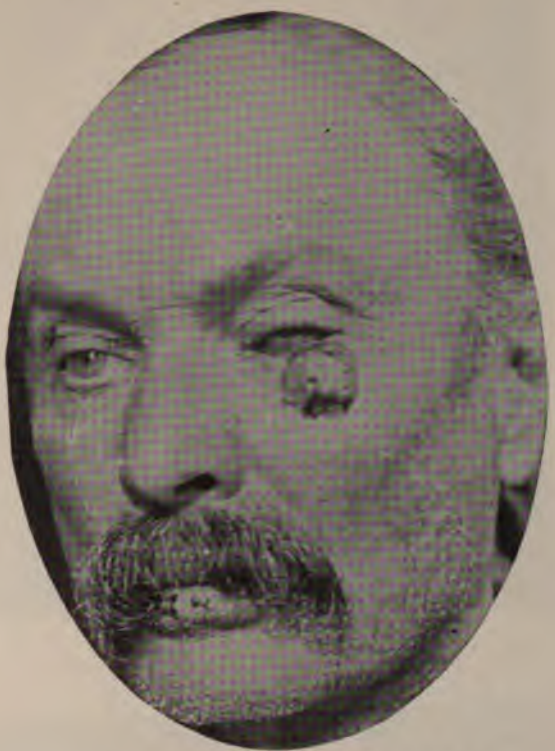


FIG. 1.—Epitheliomata, lower lip and lower eyelid, treated August, 1902.

FIG. 2 —Photograph of patient shown in Fig. 1, August, 1907, after five years.

PLATE XXVI.—To Illustrate Dr. W. A. Pusey's Article.

FIG. 3.—Epithelioma of lip, March, 1903.

FIG. 4.—Photograph of patient shown in Fig. 3, with healthy scar, April, 1907.

PLATE XXVII.—To Illustrate Dr. W. A. Pusey's Article.

FIG. 5.—Epithelioma, April, 1903.

FIG. 6.—Photograph of patient shown in Fig. 5, with healthy scar, April, 1907, after four years.

PLATE XXVIII.—To Illustrate Dr. W. A. Pusey's Article.

FIG. 7.—Epithelioma, April, 1903.

FIG. 8.—Photograph of patient shown in Fig. 7, May, 1907, healthy scar for four years.

of eighteen months, and without further treatment at my hands the carcinoma progressed and finally caused his death. Case 11 was a recurrent, superficial epithelioma of the forehead which was healed, but later there was a recurrence, for which the patient was treated by another physician and she is, I believe, now well, five years after I treated her. Case 12 was a recurrent epithelioma of the side of the nose and inner canthus, which I healed six years ago. In the last few months she appeared with a small epithelioma on the bridge of the nose near the site of the original lesion. The new lesion has promptly yielded to X-rays.

Cases 9, 10, 11, and 12 in this group might be classed as distinctly benefited, but in view of the fact that they were cases which might have been cured, they are classed as failures. Amputation of the hand, I believe, would have saved Case 10. Case 9 would, I believe, judging from my experience in orbital carcinoma, have been a surgical failure. It had recurred already after operation. Case 11, I believe, and Case 12 are at present well and are not actually failures.

## SUMMARY

Of the thirty-one cases which are classed as not entirely successful, twenty-eight were cases which had failed of relief under other forms of treatment; only three were primary cases. These three cases were all in the group of failures; they were all carcinomata involving the orbit and were inoperable. There are in this entire list of thirty-one cases not successful only five cases in which, in my opinion, there was any hope of cure by other methods of treatment. All of these five cases had previously been treated surgically and all were referred to me by surgeons. One of these five cases, Case 2, in the practically successful group was an epithelioma involving the external auditory canal. The other four were Cases 9, 10, 11, and 12 among the failures which have been considered in the preceding paragraph.

There is, however, room for quibbling about all of the cases which are not radically successful. Counting then the thirty-one cases which were not radically cured as failures,

there remain eighty successful cases in a list of one hundre and eleven successive cases of epithelioma treated more tha three years ago, a showing of seventy-two per cent. of suc cessful results. This record will, I believe, bear compariso with that of any similar group of cases treated by any oth method.

## REPORT OF EIGHT HUNDRED DERMATOLOGICA CASES TREATED WITH X-RAY AND HIGH FREQUENCY CURRENTS AT THE MOUN SINAI HOSPITAL (Dr. Lustgarten's Clinic)

By Dr. Samuel Stern, of New York

The subject of "Radiotherapy" is one that is of extrem interest to all dermatologists. It is one of the younges branches of medical science, and for the short period of it existence has created more dispute and occupied a larger par of our medical literature than probably any other branch o medicine.

It has practically divided dermatologists into a numbe of factions, running all the way from the ultra radicals, who advocate its use in every form of skin disease, to the ultra conservatives who almost entirely condemn it.

The only way to determine which faction is correct is by continued experiments and the collecting of carefully compiled statistics as reported by reliable observers. This is a very difficult matter, as we often find very much exaggerated, and occasionally absolutely ridiculous claims published in our medical literature by men who rush into print with all sorts of wonderful cures without waiting to see whether these cures will stand the test of time or are merely temporary improvements.

Often they are misguided themselves, only to discover this fact too late to retract their claims, and, unfortunately, they do not take the trouble or do not think it of sufficient importance to amend their reports and acknowledge their error. Probably some are not misguided as much as they

are misleading, to satisfy their craving for notoriety. Others do not appreciate the fact that their failures may be due to faulty technique or imperfect apparatus. In a number of instances, again, miracles are probably performed as the result of wrong diagnoses. In fact, there are so many things to be considered in determining the respective standing of radiotherapy in dermatology that the task is indeed a very difficult one.

That this standing is a very important one is beyond question. We are to-day in a position—thanks to the aid of radiotherapy—to benefit and even cure a large number of chronic cases, a number of which, such as mycosis fungoides, rhinoscleroma, etc., were not so very long ago regarded as practically hopeless.

The manner in which the X-ray does its work is still in dispute. Its ultimate action is that of a destructive agent. It will destroy animal tissue, and probably the fundamental basis of its beneficial effects in dermatology is due to the fact that diseased tissue has a much lower vitality and is more rapidly destroyed than healthy tissue. The parts of the tissue primarily affected are the cellular elements, which undergo a slow degeneration; while the connective and elastic tissues are only affected as the result of this cell disintegration. The bactericidal effects of the X-ray are probably worthy of very little consideration.

Sir Oliver Lodge[1] considers that the destructive effects of the rays are secondary, and are due to ultra-violet light and to the chemical or ionizing action of the rays upon the tissues or upon air in immediate contact with the exposed surface. That is, the rays have an oxidizing action.

Bordier[2] showed that the X-rays have an effect on the phenomena of osmosis, and that the consequent interference with the molecular changes is followed by disturbances of nutrition and inflammation.

Holzknecht[3] divides the various tissues according to their susceptibility to the X-ray, in the following order:

[1] *Bristol Medico-Chirurgical Journal*, vol. 205.

[2] *Med. Electrol. and Radiol.*, vii, 72.

[3] *Arch. d' Electric. Med.*, Jan. 10–25, 1905 (Abstract in *Med. Electrol. and Radiol.*, vi, 49).

1. Very sensitive: Lymphoid tissue, the skin modified b psoriasis and mycosis fungoides.

2. Sensitive: Skin modified by inflammation—acne, s cosis, lupus, and epitheliomatous tissue.

3. Moderately sensitive: Healthy epidermis and i appendages.

4. Very little sensitive: Connective tissue, vessels, et cete

I think we may add, as recent developments have show spermatozoa and rhinoscleroma to the category of very sen tive, and the various forms of eczema to the sensitive cla

The manner in which the high-frequency spark does i work is of an entirely different nature. Given in mild dos and through various forms of vacuum tubes, it has a gentl stimulating, antipruritic action; and in stronger doses, e pecially if applied through carbon or metallic electrodes, has a cauterant, destructive action, not unlike that of a therm cautery, but much more easily managed and the dosage fa better regulated.

At the Mt. Sinai Hospital of this city (Dr. Lustgarten Clinic) we have treated during the past three years about eigh hundred dermatological cases with X-rays and high-frequenc currents. The object of this paper is to give a form of statistica report as to the results accomplished in these cases. Time doe not permit me to go into any lengthy detail, so I will divid them under different headings and briefly report upon them

*Epithelioma.* The longer we treat epithelioma with ra diant energy, the more we realize that our success depend a great deal upon the proper choice of cases. The man wh will depend upon this form of treatment as a matter of routin is doomed to a great many disappointments. There is no ques tion as to the value of the method in suitable cases, but ther is also no question as to its failure in improperly chosen ones It is very hard to lay down any fixed or definite rules as t the choice of cases. Experience is the most important facto As a general rule, it might be said that the lesions best adapte for radiotherapy are those which are situated on the surfac of the epidermis. Deeper-seated, nodular epitheliomas ar best treated by other methods. Small, nodular epithelioma situated on the surface of the skin, can often be readily d

stroyed by a few applications of the high-frequency spark. The modus operandi is to use a spark strong enough to destroy the lesion and then to wait until the scab formed has fallen off —probably two or three weeks—and to repeat the operation if necessary. The best electrode for this purpose is the one first suggested to me by Dr. Lustgarten, consisting of an ordinary lead pencil sharpened on both ends, with a piece of lead foil around one end fitted into a handle.

Large unindurated epitheliomas are best treated with the X-ray. In large epitheliomas with indurated borders, we have found most satisfaction in destroying the borders with the high-frequency spark, and then treating them with the X-ray. This combination of the two methods is probably the one we most resort to. We often find that epitheliomas will improve up to a certain point under X-ray treatment, and then come to a standstill, when probably a few applications of the high-frequency spark will bring about a cure.

We have treated eighty-five cases of epithelioma by these methods. Out of these, forty-five were clinically cured; one was referred for other treatment; some deserted before treatment had a fair chance; others were lost track of. It is extremely difficult to keep in touch for any length of time with patients treated in an out-door patient department of a hospital.

*Carcinoma.* We have had a large number of deep-seated recurrent carcinomas referred to us for X-ray treatment, but as these are not dermatological cases proper, I will not dwell upon them, simply stating that we have often had encouraging results for a while, only to be disappointed in the end. Personally, I have never seen a deep-seated internal carcinoma cured with the X-ray.

*Sarcoma.* The results accomplished in various types of sarcoma are somewhat more encouraging. Occasionally we get startling results. The following case is one of the most interesting: A. R., female, aged 21. Was referred to the clinic on August 1, 1906, by the surgical division, with the following history. Three years ago she had sarcoma of the right scapula, which was removed by Dr. Lilienthal. About five months ago she noticed a swelling behind the right ear,

which began to increase rapidly until when operated up on July 15, 1906, it was the size of a hen's egg. Operati was performed by Dr. Elsberg, who found the growth i operable. A small section was removed for pathologic examination, and the diagnosis of "metastatic perforati sarcoma of the dura" was established. X-ray treatme was begun September 19th. After sixteen treatments h condition was very much improved. The pain had entire disappeared and there was hardly any sign of the tumor le Treatment was discontinued for a while. On October 8 treatment was begun again; between that date and Novemb 19th she had twelve additional X-ray exposures, with t astonishing result of the complete disappearance of the tumo Unfortunately, somewhat later, she developed metastas in the lungs, which rapidly proved fatal.

In two cases of sarcoma hæmorrhagicum and two cas of sarcomatosis cutis pigmentosa there was a very decide improvement under treatment with the X-ray.

*Acne Vulgaris.* These cases make up a large part o dermatological practice, and the results accomplished wit them by the aid of the X-ray are extremely gratifying.

It is preferable to puncture and evacuate the pustule and then to apply the X-ray. The average duration o treatment necessary is from four to six weeks. The numbe of exposures required is about a dozen, and they might b given at the rate of about two or three a week at first, an later one a week. Treatment might be continued until ther is a very slight dermatitis, when it must be promptly dis continued—but it is only rarely that we continue the treat ment to the development of even a mild dermatitis. As rule, the improvement begins after a few treatments.

We have treated about one hundred and twenty of thes cases with generally good results.

*Acne Rosacea.* The results accomplished in this form of disease are not very satisfactory. Other methods o treatment are preferable. In fifteen cases treated there wa very little accomplished.

*Psoriasis.* The value of the X-ray in psoriasis is we established.

The length of treatment necessary to cure it depends very much upon the nature of the lesions. Acute and subacute lesions—that is, those that do not have much induration and are covered with small flake-like scales—yield much quicker to treatment than the old chronic indurated spots covered with thick scales. Those situated on the face and scalp generally yield quicker than those on the trunk and extremities. As a rule, we do not treat psoriasis situated on the trunk with X-ray, on account of the possible injury to the underlying viscera. The treatment does not seem to have had much influence upon the recurrence of the lesion, although it seems to me as if those cases where the X-ray has been used until a dermatitis and peeling off of the skin have been produced remain free for a longer period than those cured by other methods.

The number of patients treated was forty-eight.

*Eczema.* The results accomplished in this class of cases is very encouraging. Eczemas of all varieties yield more or less readily to the X-ray.

The moist, weeping kind generally requires less treatment than the dry, scaly patches. I have repeatedly seen cases of years' standing, that have resisted every other form of treatment, cured with the X-ray. We have treated one hundred and twenty-five cases with generally good results in all those who have sufficiently persisted with the treatment.

In *lichen chronicus*, *lichen planus*, and *lichenoid eczema* conditions, while the subjective symptoms yield readily to treatment, as a rule they are more stubborn as to final results than the cases of eczema.

Out of forty-five cases treated, the large majority were cured.

*Lupus Erythematosus.* At one time it looked very much as if the high-frequency spark was the ideal treatment for lupus erythematosus, especially if the lesion was not an extensive one. As a rule, the results were very prompt; we could destroy a small area at each treatment, with a remaining smooth, flat scar.

The method used is that of holding the pencil electrode within a very short distance (about 2 mm.) of the lesion, with

a current of sufficient intensity to destroy the tissue to th depth desired. In using the high-frequency spark as a de structive agent, the most important thing is the regulatio of the spark-gap. It is advisable to have an indicator on th rod, with which the spark-gap is regulated, which shows at glance the length of the spark with which we are working. A a rule a short spark is sufficient.

For superficial destruction, a pointed glass vacuum ele trode will suffice, but where deeper destruction is require we must use carbon or metallic electrodes. The determina tion as to the proper amount of destruction required can onl be gained by personal experience. Unfortunately, in lupu erythematosus the treatment does not guard against re currence, and I regret to state that while the immediat result is good, the ultimate result is not quite so favorable

We have treated forty cases with good immediate result but with recurrence in a large number of them.

*Lupus Vulgaris.* We do not see very many of these case in our clinics in this country.

Lupus of the mucous membranes is best treated with the X-ray, while lupus of the other parts of the skin seems to yield quicker to the sparking, as above mentioned.

In six cases treated, there were cures in three, and im provement in the others.

Five cases of *tuberculosis verrucosa cutis* did very well with the high-frequency spark treatment.

In common *alopecia*, if it has not progressed too far, and if it is the result of an insufficiency of blood supply to the scalp a great deal can be accomplished with the high-frequency fla vacuum electrode-labile applications, using the current strong enough to produce a fair degree of hyperæmia of the scalp

In *alopecia areata*, the result is about the same as that accomplished by other methods.

We have treated thirty-five cases of alopecia.

The high-frequency spark is of very great value in the destruction of *verrucæ* of different types; also in the destruction of different forms of *nævi*, and in *molluscum contagiosum*. In small, superficial lesions, the pointed glass electrode is to be preferred, on account of its being less painful and producing

practically no scarring whatever; but in larger lesions, where deeper destruction is required, we must use the carbon electrodes. In a bad case of *nævus pigmentosus pilosus*, situated on the face of a young girl, I applied the X-ray until it produced a second degree dermatitis which healed rapidly, leaving a very good scar. I think this is a very good way of treating these cases, but we must be careful not to produce too serious a dermatitis.

In all, we treated seventy-five of these cases.

*Keloid.* The X-ray has a very decided action on scar tissue. It does not require many treatments to produce a more or less flattening of keloidal growths, but to expect a permanent cure it appears to be necessary to continue the treatment until we have produced a fair degree of dermatitis.

There were fifteen of these cases treated.

In four cases of *folliculitis decalvans* treated with the X-ray, the result was very satisfactory.

In *pruritus*, due to various causes, the X-ray and high-frequency currents both seem to have the property of allaying itching. In treating young persons, especially if the pruritus is in the genital region, we must keep in mind the property of the X-ray to produce sterility, and depend upon the high-frequency effluvæ, which is harmless.

We treated twenty-eight of these cases.

In a case of *kraurosis vulvæ*, in an old lady of 76, after a half dozen X-ray exposures up to date, there is very little improvement.

*Mycosis Fungoides.* This is one of the conditions in which we were absolutely helpless until the X-ray era began. At present we can do a great deal for it with the X-ray, but I am sorry to say the lesions are only controlled, not permanently cured. We treated five of these cases, and all have been repeatedly clinically cured, only to relapse shortly after treatment was discontinued. One case has been under treatment for the past three years, and is apparently well as long as he gets his weekly exposures, but returns with new patches if treatment is discontinued for a while. The subjective symptoms, the very bad itching, are generally improved in a short time, and the patients continue in their

regular occupations with a feeling of general well-being. Th in itself is a great triumph for the X-ray.

*Rhinoscleroma.* Probably the most gratifying results the field of radiotherapy are accomplished in this—up to short time ago regarded as incurable—ailment. One of t most interesting cases was that of a woman, Russian by birt 53 years old, who was referred to the clinic for treatment b Dr. Milton J. Ballin, on June 1, 1906. The history dates ba sixteen years when the nose first began to enlarge and t pharynx and naso-pharynx became involved. In these latt organs, the condition, which began in a catarrhal form, pr ceeded to a process of ulceration which gradually heale leaving a firm cicatricial band. The nose continued to e large, despite all treatment; several operations perform had no effect whatever. When she presented herself f treatment the nose was probably double its natural size, wit a large ulcerating growth spreading from both nostrils ov the upper lip. The nasal passages were entirely occlude the whole organ having a hard, ivory consistency.

The treatment was at first given three times a week wit a medium vacuum tube, at a distance of about four inches, f a period of five minutes. As the extra-nasal part of th growth disappeared, a tube of a higher degree of vacuum wa used, and the exposures reduced to twice a week. She d veloped a mild degree of dermatitis several times, whic promptly disappeared on discontinuing treatment for a wee or two. The improvement was very rapid. It began aft the first few treatments, and at the end of five months the no looked practically normal. In another case of rhinoscleron which has only been under treatment for a short time the is also a decided improvement.

We also treated at the hospital a most interesting case primary *scleroma of the larynx*, due to the bacillus of rhin scleroma. This was in a young woman of 21, born in Russi who came to the clinic of Dr. Emil Mayer with sympton of hoarseness and dyspnœa. On examination a large growt was seen under the vocal cords on a level with the cricoi cartilage, almost entirely occluding the calibre of the laryn A small section was removed and the pathological examinatio

proved it to be rhinoscleroma. She was referred for X-ray treatment, but after only one or two exposures the dyspnœa became so marked that it was decided to open up the larynx. This was done by Dr. Gerster on March 30, 1907, who made a longitudinal incision three and one-half inches long, reaching to within one-quarter of an inch of the sternum. A tracheotomy tube was inserted, and the rest of the incision was kept open to allow more direct application of the X-ray. The first application was given on April 9th, under an anæsthetic, with the walls of the larynx held open by retractors. The subsequent applications were given without an anæsthetic, at the rate of three times a week, each of five minutes' duration and applied through a Friedlander shield, with the opening of the hard-rubber attachments in direct contact with the incision. The tumor yielded rapidly to this treatment. On May 15th, five weeks after treatment was begun, the tracheotomy tube was removed and the incision permitted to heal by granulation. An examination of the larynx at this time showed it to be perfectly clear, and no signs of any remains of the tumor could be seen. The dyspnœa had entirely disappeared, and the patient's condition was very good. A laryngological examination made five months later shows the larynx to be entirely clear and no signs of any recurrence whatever.

*Sycosis.* This is one of the conditions in which the opinion of all dermatologists as to the value of the X-ray is practically unanimous.

The results accomplished, in comparison with other methods of treatment, are simply marvellous. I have repeatedly seen cases of five years' standing, involving almost all the hair follicles of the face, cured in six weeks' treatment. The method of treatment is to continue with the X-ray until all the affected hairs are epilated.

We have treated one hundred and five of these cases, with almost one hundred per cent. cures.

The action of the X-ray upon the hair follicles in producing epilation can be well utilized in other diseases affecting the hairy portions of the body—such as *trichophytosis capitis*, of which we have treated thirty cases with fairly good results.

Also in *favus*, of which there were five cases treated wit good results.

In these latter two conditions it is advisable to appl various germicidal ointments in addition to the X-ray.

Another condition in which the epilating power of th X-ray can be made of great value is in *hypertrichosis*. Ha epilated with the X-ray, if left alone, generally returns i about two or three months, but if an occasional exposure given for a long time, probably a year after epilation, the ha follicles become permanently destroyed.

This condition requires the most careful technique, fo we must keep in mind that the treatment is for cosmet reasons, and to replace superfluous hairs with a bad X-ra burn which will probably leave behind a permanent networ of telangiectatic blood vessels may lead to serious inconvenienc We do not treat these patients in the clinic, but in privat practice I have treated fifteen cases with good results i those who had sufficient perseverance.

I might also mention several cases of *hyperidrosis*, affectin the palms of the hands, who improved under X-ray treatmen but only after a long series of treatments. In a patient wit *xanthoma diabeticorum*, who had cord-like ridges over bot palms, arms, and legs, there was a decided flattening, an even complete disappearance of the ridges on the parts treate

*Discussion*

Dr. M. B. Hartzell, of Philadelphia, said there were one c two points in connection with the X-rays that he wished to spea about, and one was, the use of this agent in the treatment c epitheliomata occurring at the muco-cutaneous borders. Th dermatologists had been treated rather badly by the surgeons i this connection. They had been told repeatedly that the ma who treated an epithelioma of the lower lip with the X-rays instea of having it excised was pursuing a course that was little sho of criminal. In spite of that fact we knew there were certai cases where the X-ray might be employed with the utmost pr priety. The speaker referred to two such instances coming und his observation. One was a typical epithelioma of the lower lip i a patient, ninety-four years old, who had refused radical treatme by the knife. After ten three-minute exposures with the X-ray th

lesion disappeared, and the man had thus far remained well. He had avoided what he regarded as a very serious operation.

In the second case there were two fungating lesions of the lower lip in a man who refused operation. These were also cured under X-ray treatment. Dr. Hartzell said he was willing to admit that the proper treatment of epithelioma of the lower lip was excision, with removal of the adjacent glands, but there were certain cases in which resort to the X-rays was entirely proper and sometimes necessary.

As to the treatment of acne, the speaker said he believed the X-ray treatment should be reserved for the cases which failed to improve under other methods. We were beginning to learn that the application of the X-rays to the face was apt to be followed by an atrophy of the skin, which was very disfiguring. For that reason the treatment should not be resorted to in acne excepting where other remedies had failed.

Dr. Burnside Foster, of St. Paul, said that after a fair experience with the use of the X-rays he was able to confirm the favorable results that had been reported by the various speakers. The dangers of the X-rays in the hands of the expert were not to be despised, and in the hands of the novice were great. The speaker said he had seen deplorable results follow the treatment in cases of psoriasis, eczema, favus, and ringworm, and they were largely due to the method in which the treatment was applied by inexperienced operators. This fact could not be too strongly emphasized, especially in view of the fact that the apparent simplicity of the method appealed to every one. For that reason many men were apt to take up the treatment and apply it indiscriminately who were entirely unfitted for it. As a result, their patients grew worse, and the physicians laid themselves open to damage suits, and he had one case of the kind in mind where a verdict in favor of the patient would probably be rendered. He suggested that the Congress should put itself on record in regard to the dangers of the X-rays in inexperienced hands.

Dr. Francis J. Shepherd, of Montreal, said he was very much interested in the cases detailed by Dr. Pusey, whose results with the X-ray treatment were in some respects quite wonderful. In certain cases of epithelioma, notably in lesions about the eyelids, the X-ray was probably the best method of treatment, but when it came to lesions of the lower lip and of the muco-cutaneous sur-

faces, the speaker said he would strongly object to the use of t rays, especially where there was a liability to early involveme of the glands. Under such conditions surgical treatment w strongly indicated.

Dr. Shepherd asked how one could select the proper cases f X-ray treatment? How could one tell whether the glands we involved or not? The same rule applied here as in Paget's disea of the nipple, and in dealing with epithelioma of the lower li one should not waste time with the X-rays. To do so was t subject the patient to unnecessary risk.

Dr. William A. Pusey, of Chicago, said the question of wheth a case was suitable or not for treatment with the X-rays had bee brought up several times. In his opinion, there was no reaso for trying to select a peculiar type of epithelioma to be treate with X-rays. He had a rule of his own, which he had found bot safe and defensible. He was willing to treat any epithelioma wit X-rays in which a conservative surgeon did not consider it feas ble or necessary to remove the contiguous glands. That at onc eliminated most cases of epithelioma about the muco-cutaneou junction where operation was possible. It did not eliminat those in very old people, or those rare cases where an operatio would not be tolerated. Subject to this limit he believed X-ray need not be restricted to any particular field. If it was no as reliable in one lesion as in another, it was not worth while con sidering. Dr. Pusey said he had never seen a mass of carcinom involving the skin that did not ultimately undergo degeneratio under the influence of X-rays. He recalled one case of enormou epithelioma involving the glabella in which X-ray treatment wa continued for over three months without getting any reaction After making an ineffectual attempt to have the case treate surgically, he again resorted to X-rays in enormous quantitie This time the treatment was followed by a reaction and degenera tion, and the lesion was reduced to a flat ulcer which promptl healed. The question of resistance of epitheliomas to X-ray was largely one of personal equation of the patient and he did no believe that there was any epithelioma that could not be made t degenerate under X-rays. It seemed to him that with both X-ray and radium we were dealing with practically the same agent, an that under the influence of these rays there was an absorptio of energy by the cells which eventually caused them to disint grate. It was purely a cellular disintegration caused by the fac

that tissue cells are susceptible to this form of energy, just as silver salts are.

PROF. E. GAUCHER, de Paris, a dit: Au risque de passer pour un réactionaire, qu'il voudrait réfréner un peu l'enthousiasme des partisans des rayons X et du radium. Dans la majorité des cas, pour les épithéliomas superficiels et de petite dimension, on *arrivait* à un résultat satisfaisant beaucoup plus rapide et beaucoup moins couteux en détruisant la lésion par *carbonisation* à l'aide du thermo-cautère. Pour les épithéliomas très étendus, il croyait qu'il était prudent de ne pas trop attendre pour pratiquer l'exércise et perdre son temps en employant la radiothérapie. Après avoir employé beaucoup la radiothérapie, il pensait qu'elle ne présentait, dans la majorité des cas, aucun avantage marqué sur les anciennes méthodes, sans parler des accidents de radiodermite plus ou moins graves, auxquels elle pouvait exposer.

PROF. THEODOR VEIEL, of Cannstatt, Württemberg, said that Prof. Gaucher's remarks were similar to those of his own which he had made at the International Congress in Berlin. At that time he had expressed the view that the X-ray therapists were going too far, and should leave more to the surgeon. He could recall many cases that were kept too long in the hands of the radio-therapist and came too late to the surgeon. It was better not to attempt too much with the X-rays, especially in cases where there was infiltration, or where the glands were involved.

DR. HERMAN LAWRENCE, of Melbourne, Australia, said he did not expect the X-ray baths described in his paper to be used by any one who had not the proper experience with this agent. Otherwise the treatment might lead to even fatal results. Personally, he had treated many cases of acne vulgaris with mild doses of the X-ray and had never observed any bad results.

DR. SAMUEL STERN, of New York City, said that in connection with the treatment of epitheliomata of the eyelid by means of radium, to which two of the speakers had referred, he wished to call attention to a case of this kind which he had exhibited at the Clinical Session of the Congress on Tuesday morning. In that case radium had been tried for five months without any result and was promptly cured with the X-rays. This was perhaps an exception to the rule, but the result spoke for itself.

Dr. Stern said he was glad to hear Dr. Pusey's statem regard to the effect of the X-rays on epitheliomata. He with him with the exception that he found that in dealing deeper-seated hard nodular epitheliomata or with the thick ened keratotic form known as "seafarer's epithelioma" it take a long time to produce a reaction with the X-ray, and methods of treatment were preferable.

*Adjournment at 1 p.m.*

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